CEMEX ROCKFIELD QUARRY

ROCKFIELD MODIFICATION PROJECT (EIR 7763) AND UNCLASSIFIED CONDITIONAL USE PERMIT APPLICATIONS NOS. 3666 AND 3667

DRAFT ENVIRONMENTAL IMPACT REPORT

VOLUME I: EXECUTIVE SUMMARY—CHAPTER 10

State Clearinghouse No. 2020060123

DECEMBER | 2024

Lead Agency
County of Fresno, Community Development

BENCHMARK RESOURCES

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Lead Agency
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EXECUTIVE SUMMARY

INTRODUCTION

RMC Pacific Materials, LLC. ("CEMEX" or "Applicant") has applied to the County of Fresno Department of Public Works and Planning (County) for two Unclassified Conditional Use Permits (CUP) (CUP Application Numbers 3666 and 3667) to allow the Rockfield Quarry a continuation and modification of its current aggregate (rock, sand, and gravel) mining and processing operations. The project is comprised of two life stages estimated to span 100 years, which includes mining deeper and then reclaiming the project sites. The project is generally located at two separate sites approximately two miles apart, as shown on Figure 1-1, "Regional Location," of Chapter 1, "Introduction," of this Draft EIR. The first, the Plant Site, is located on the west side of North Friant Road between North Willow Avenue and Little Dry Creek, and the second, the Quarry Site, is located on the west side of North Friant Road between Bluff View Avenue and Lost Lake Road.

This Executive Summary provides an overview of the proposed project, describes alternatives to the proposed project, and presents a summary of the environmental impacts and related mitigation measures identified in the Draft EIR.

PUBLIC REVIEW

This Draft EIR is available for public review and comment during the 45-day period identified on the notice of availability/notice of completion (NOA/NOC) of a Draft EIR, which accompanies this document. This Draft EIR and all supporting technical documents and reference documents are available for public review at the Fresno County Development Services Division located at 2220 Tulare Street, 6th Floor, Fresno, California 93721 and on the Fresno County website at:

https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/environmental-impact-reports/cemex-rockfield-expansion

During the 45-day public comment period, written comments on the Draft EIR may be submitted to the County Development Services Division at the following mailing address:

Attn.: David Randall, Senior Planner
Fresno County Public Works and Planning Department
2220 Tulare Street, 6th Floor
Fresno, California 93721

Written comments on the Draft EIR may alternately be submitted via e-mail, with the subject line "CEMEX Rockfield Expansion," to the following email address:

E-mail: drandall@fresnocountyca.gov

Oral comments on the Draft EIR are welcome and may be stated at a public meeting, which shall be held as indicated on the NOA/NOC.

Following the public review and comment period, responses to all written and oral comments received on the environmental analysis in this Draft EIR will receive a response. The responses and any other revisions to the Draft EIR will be prepared as a response-to-comments document. The Draft EIR and its appendices, together with the response-to-comments document will constitute the Final EIR for the proposed project.

OVERVIEW OF THE PROPOSED PROJECT

Project Location

The Rockfield Quarry is located on two properties: the Plant Site and the Quarry Site. Both properties are located north of the City of Fresno, between North Friant Road to the east and the San Joaquin River to the west, in an unincorporated area of Fresno County (see Figure 1-1 and Figure 1-2, "Site Location," of Chapter 1 of this Draft EIR.).

The two properties are the Plant Site and the Quarry Site, as described below:

Plant Site: The Plant Site is located on approximately 138.5 acres adjacent to North Friant Road, approximately 1.5 miles north of the City of Fresno, and approximately 0.5 miles east of the San Joaquin River. The 138.5-acre Plant Site area includes approximately 126.6 acres owned by the applicant (APNs 300-070-56S, 57S, 58S, 59S, and 60S) and 12.9 acres owned by the California Department of Fish and Wildlife (CDFW) (portions of APNs 300-070-43ST, 48ST, and 50ST).

CDFW acquired the south half of the Ball Ranch in 2000, which included the approximately 12.9-acre area that was part of the mining and processing operations associated with the Plant Site. In March 2019, the applicant acquired the 126.6-acres of the Plant Site that was under lease from Ball Ranch, and the applicant wishes to continue operations on those portions of CDFW property that are still utilized by the applicant for its current operations. In the event CDFW does not allow operations to continue on the 12.9 acres currently owned by CDFW, such properties would not be used for mining and stockpiling operations. This Draft EIR conservatively assumes that CDFW property will continue to be used for mining and processing operations

under the proposed project. Therefore, this 12.9-acre area is included in the 138.5-acre Plant Site.

Quarry Site: The Quarry Site is located on approximately 352.4 acres adjacent to North Friant Road, approximately 1.1 miles north of the applicant's current Plant Site and approximately 1.5 miles south of the town of Friant. The Quarry Site properties (APNs 300-040-19 and 20, 300-080-01S, 300-250-12 and a portion of 300-310-01) are owned by RMC Pacific Materials, LLC, a wholly owned subsidiary of CEMEX.

Project Objectives

The project purpose is to continue and expand existing mining and processing operations at the Plant Site and Quarry Site and reclaim the two sites when mining operations are complete.

The objectives for the proposed project are to:

1) Continue to provide a reliable and sustainable, local source of high-quality aggregate to help meet the current and long-term demand (100 years) for construction materials in the Fresno region;
2) Continue to utilize known aggregate reserves from existing partially mined properties, including those designated by the state and county as Mineral Resource Zone 2 (MRZ-2) (Mineral Resource Zone areas where adequate information indicates that significant mineral resources are present, i.e., sand and gravel);
3) Continue to utilize high quality aggregate resources that meet the California Department of Transportation's specifications for use in Portland Cement Concrete (PCC) and Asphaltic Concrete (AC), which aggregate is important for quality infrastructure growth and maintenance because of its versatility, value, and relative scarcity;
4) Maintain a local source of construction aggregate with enough annual sales capacity (3.0 MT) to encourage a healthy, competitive market;
5) Continue to provide aggregate resources with access to an efficient local road network;
6) Continue to provide an environmentally sound project that would balance the recovery of the aggregate resource with the protection of other resources including wildlife habitat, groundwater, surface water, and air quality;
7) Continue local quality jobs, while also benefiting local downstream businesses and creating an enhanced tax revenue to the county;
8) Maintain consistency with the San Joaquin River Parkway Master Plan;

9) Reclaim both sites to wildlife habitat in a manner similar to the reclaimed mine sites that make up the majority of the San Joaquin River Parkway Properties; and
10) Provide potential Parkway trail easements.

Project Features

As stated previously, the Applicant has applied to the County for two CUPs (CUP Application Numbers 3666 and 3667) to allow the Rockfield Quarry a continuation and modification of its current aggregate (rock, sand, and gravel) mining and processing operations. The project would occur in two stages with a total project life estimate to be up to 100 years.

- Stage 1 would continue concurrent operations at both the Quarry Site and the Plant Site for up to 30 years. At the Plant Site, aggregate mining of the alluvial deposit would continue, and the existing aggregate plant will continue to wash, screen, crush, and sort aggregate form the Quarry Site. The existing ready-mix concrete plant will continue to operate. A modern asphalt plant would be added to replace the outdated asphalt plant that was removed. Aggregate products from the Plant Site and ready-mix concrete would continue to be sold to customers and asphalt sales would resume. Periodic use of a portable crushing plant to recycle come-back concrete would continue with the addition of asphalt recycling and the import of concrete debris to recycle into CMB and asphalt debris to be recycled into asphalt product (RAP). At the Quarry Site, mining would be modified to include the hardrock (granite) that lies beneath the alluvial deposit currently being mined. Mining of the hardrock would require drilling and blasting and would occur to a depth of approximately 600 feet bgs. An aggregate processing plant would be added to the Quarry Site to wash, screen, crush, and sort the aggregate. A portable aggregate processing plant may be used initially.
- Upon approval of the project, the combined annual sales of aggregate from both sites are estimated to increase from the 1.4 MT/year allowed under the current permits to 2.0 MT/year within approximately five years of project approval and up to 3.0 MT/year within approximately 10 years of project approval. The Plant Site would then be reclaimed as 138.5 acres of open space, riparian, and open water wildlife habitat.
- Stage 2 would continue hard rock mining and processing operations only at the Quarry Site for approximately 70 additional years. The asphalt plant and ready mix plant would be relocated from the Plant Site to the Quarry Site. Stage 2 operations are estimated to have annual aggregate sales of 3.0 MT/year. The Quarry Site would then be reclaimed as 352.4 acres of open space, riparian, and open water wildlife habitat.

Required Approvals

As the local land use authority, Fresno County is the public agency with the greatest responsibility for approving the project as a whole and is therefore the lead agency for purposes of environmental review under CEQA. Other agencies may have permitting or approval authority over various aspects of the project. These agencies include the following:

Federal Agencies

- U.S. Fish and Wildlife Service (incidental take statement)

State Agencies

- California Department of Conservation, Division of Mine Reclamation (SMARA reclamation plan review and release of financial assurance)
- California Department of Fish and Wildlife (lake or streambed alteration agreement; California Endangered Species Act permit)

Regional and Local Agencies

- Central Valley Regional Water Quality Control Board (Section 401 certification)
- San Joaquin Valley Air Pollution Control District (SJVAPCD) (Authority to Construct for new asphalt plant at Plant Site, new aggregate plant at Quarry Site, existing ready-mix concrete plant when relocated to Quarry Site, and asphalt plant when relocated to Quarry Site; portable air permit for portable recycle plant)

DRAFT EIR SCOPE AND ISSUES EVALUATED

Issues Evaluated

CEQA does not require preparation of an Initial Study when the lead agency elects to prepare an EIR or Draft EIR (CEQA Guidelines Section 15060[d]). Therefore, the County has elected to not prepare an Initial Study and to evaluate in detail all of the topics in the Environmental Checklist of Appendix G of the CEQA Guidelines, which are listed below.

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation

- Energy
- Greenhouse Gas Emissions
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Tribal Cultural Resources
- Utilities and Services Systems
- Wildfire
- Mandatory Findings of Significance

Alternatives

The CEQA Guidelines specify that a Draft EIR must describe a reasonable range of alternatives to the project, or to the location of the project, which could feasibly attain the basic project objectives (Guidelines Section 15126.6). The "no project" alternative, which considers what impacts would occur if conditions continued, must be considered (Guidelines Section 15126.6[e]), and the Draft EIR must also identify the environmentally superior alternative. If the "no project" alternative is the environmentally superior alternative, the Draft EIR must identify an environmentally superior alternative from among the other alternatives (Guidelines Section 15126.6[e][2]).

Summary of Alternatives

The alternatives evaluation considered several potential alternatives. Some were eliminated as they were determined to either not have the potential to feasibly achieve the basic project objectives and/or reduce significant project impacts. The following alternatives were selected and analyzed/compared to the proposed project and are evaluated in Chapter 6, "Alternatives," of the Draft EIR:

Alternative 1: No Project

Under the No Project Alternative, mining and processing operations on the Plant Site and quarry Site would continue unchanged through 2026. At the Quarry Site, there would be no expansion of mining area or depth and no blasting would occur. In addition, none of the processing plants currently located at the Plant Site would be relocated to the Quarry Site. At the Plant Site, mining would continue. No new employees would be added to either project site. Furthermore, extension of public trails through the site would not be possible as no public easements would be created. Site reclamation at both the Quarry Site and the Plant Site would be completed in accordance with the existing reclamation plan.

Alternative 2: Reduced Mining Depth (400 Feet)

Under the Reduced Mining Depth (400 Feet) Alternative, the total mining depth at the Quarry Site would be reduced from the proposed 600 feet to 400 feet with no change

to proposed annual mining production or sales volumes. The total area of disturbance or project footprint would remain the same. The reduction in mining depth under Alternative 2 would result in a loss of approximately 21% of recoverable aggregate reserves and a corresponding 14-year reduction in the length of operations from 100 years to 86 years.

Alternative 3: Reduced Mining Depth (300 Feet)

Under the Reduced Mining Depth (300 Feet) Alternative, the total mining depth at the Quarry Site would be reduced from the proposed 600 feet to 300 feet with no change to proposed annual mining production or sales volumes. The total area of disturbance or project footprint would remain the same. The reduction in mining depth under Alternative 3 would result in a loss of approximately 39% of recoverable aggregate reserves and a corresponding 32-year reduction in the length of operations from 100 years to 68 years.

Alternative 4: Reduced Mining Depth (300 Feet) with Additional Setbacks

Under the Reduced Mining Depth (300 Feet) with Additional Setbacks Alternative, the total mining depth at the Quarry Site would be reduced from the proposed 600 feet to 300 feet and would impose additional operational setbacks along the project site's eastern and western boundaries. On the project sites' western boundary, an additional 100-foot setback would be required from the current 200-foot setback for a total 300-foot setback from the San Joaquin River. There would be no change to the proposed annual mining production or sales volumes. However, the total areas of disturbance or project footprint would be reduced by approximately 30 acres, or 10.6%. The reduction in mining depth under Alternative 4 would result in a loss of approximately 43% of recoverable aggregate reserves and a corresponding reduction in the length of operations from 100 years to 63 years.

Alternative 5: Reduced Mining Depth (400 Feet) with Reduced Annual Sales (2.5 MTY)

Under the Reduced Mining Depth (400 Feet) with Reduced Annual Sales (2.5 MTY) alternative, the total mining depth at the Quarry Site would be reduced from the proposed 600 feet to 400 feet with no change to the total area of disturbance or project footprint. In addition, the proposed annual aggregate sales volumes would be reduced from 3.0 million tons per year (MTY) to 2.5 MTY. These reductions in mining depth and annual sales volumes under Alternative 5 would result in a loss of approximately 21% of recoverable aggregate reserves and a corresponding 14-year reduction in the length of operations from 100 years to 86 years.

Environmentally Superior Alternative

CEQA Section 15126.6(e)(2) requires that an EIR identify the environmentally superior alternative. CEQA also requires that if the environmentally superior alternative is the No Project Alternative, the EIR must also identify an environmentally superior alternative from the remaining alternatives. In consideration of the alternatives evaluation presented above, the Alternative 1: No Project – Reclamation of Existing Conditions Alternative would result in fewer impacts as compared to the project and the other alternatives considered. As such, the County must identify the environmentally superior alternative from the remaining alternatives.

Based on the analysis above and excluding the No Project Alternative, the County concludes that Alternative 5, Reduced Mining Depth (400 Feet) with Reduced Annual Sales alternative, is the environmentally superior alternative due to reduced impacts to views, reduced emissions of criteria air pollutants and greenhouse gases, reduced potential to disturb cultural and paleontological resources, reduced potential to cause erosion and sedimentation, reduce traffic and noise generation, and reduced drawdown in nearby water wells.

The alternatives analysis and conclusions reached regarding the environmentally superior alternative do not determine the ability of Alternative 4 to be an economically feasible option for the Applicant.

Summary of Impacts and Mitigation Measures

Table ES-1, "Summary of Project Impacts and Mitigation Measures," provides a summary of the project impacts identified and evaluated in the Draft EIR, presents mitigation measures identified in the Draft EIR, and lists the impact significance both without and with mitigation applied. As shown in the table, several impacts are found to be less than significant and do not require mitigation. Three impacts, Impact 4.1-1 related to scenic vistas; Impact 4.1-3 related to visual character and quality; and, Impact 4.17-1 related to the circulation system, are found to be significant and unavoidable. All remaining impacts would be significant or potentially significant prior to the implementation of mitigation measures but would be reduced to less than significant with mitigation applied.

The following impacts were found to be significant and unavoidable, as feasible mitigation is either unavailable or would not effectively reduce the severity of the impact to less than significant:

- Impact 4.1-1: Have a substantial adverse effect on a scenic vista.
- Impact 4.1-3: In nonurbanized areas, substantially degrade the existing visual character or quality of public views (i.e., views experienced from publicly accessible vantage point(s) of the project sites and their surroundings.
- Impact 4.17-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

In addition to evaluating project-specific impacts, a Draft EIR must also evaluate cumulative impacts. Cumulative impacts are those that would result from project impacts when combined with impacts of other past, present, or reasonably foreseeable projects. The analysis determined that the project would not result in any significant and unavoidable cumulative impacts (see Chapter 5, "Cumulative Impacts," of this Draft EIR).

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Table ES-1
Summary of Project Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
AESTHETICS AND VISUAL RESOURCES			
Impact 4.1-1: Have a substantial adverse effect on a scenic vista	PS	**Mitigation Measure 4.1-1:** Rock Staining to Reduce Visual Contrast Following completion of active mining in each phase, an appropriate earth tone rock-staining product shall be utilized on the exposed and visible pit walls to reduce the color contrast between the pit walls and the surrounding undisturbed slopes.	SU
Impact 4.1-2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	NI	None required.	
Impact 4.1-3: In nonurbanized areas, substantially degrade the existing visual character or quality of public views (i.e., views experienced from publicly accessible vantage points) of the project sites and their surroundings.	PS	Implement Mitigation Measure 4.1-1.	SU
Impact 4.1-4: Creation of a new source of substantial light and glare that would adversely affect day or nighttime views in the vicinity of the project sites.	LTS	None required.	

LTS = Less than Significant; **PS** = Potentially Significant; **S** = Significant; **SU** = Significant and Unavoidable

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
AGRICULTURAL AND FORESTRY RESOURCES			
Impact 4.2-1: Convert prime farmland, unique farmland, or farmland of statewide importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.	NI	None required.	
Impact 4.2-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract.	NI	None required.	
Impact 4.2-3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).	NI	None required.	
Impact 4.2-4: Result in the loss of forest land or conversion of forest land to non-forest use.	NI	None required.	
Impact 4.2-5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.	LTS	None required.	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
AIR QUALITY			
Impact 4.3-1: Conflict with or obstruct implementation of the applicable air quality plan.	LTS	None required.	
Impact 4.3-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standards	S	**Mitigation Measure 4.3-2:** Fugitive Dust Control Plan A Fugitive Dust Control Plan shall be prepared for the proposed project and submitted to the San Joaquin Valley Air Pollution Control District (SJVAPCD) for review and approval prior to project implementation. The Fugitive Dust Control Plan shall demonstrate how the following will be implemented and enforced throughout project activities: • Off-road engines shall be retrofitted or upgraded in order to meet the Tier 4i Particulate Emissions standard of 0.008 grams of PM10/horsepower-hour. • Unpaved roads shall be controlled at all times by application of chemical dust suppressants or other equivalent methods with a minimum of 90% effectiveness. • Stockpiles shall be controlled by daily application of water, by covering, or by use of another SJVAPCD approved chemical dust suppressant or other method.	LTS
Impact 4.3-3: Expose sensitive receptors to substantial pollutant concentrations	PS	Implement Mitigation Measure 4.3-2.	LTS

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact 4.3-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	PS	**Mitigation Measure 4.3-4:** Asphalt Plant Emissions Controls The following design features shall be incorporated into project plans to mitigate VOC, SVOC, and/or SO_2 emissions: 1) The type of asphaltic cement produced by on-site plants affects odorous emissions. Some asphaltic cements have lower VOC/SVOC emissions than others. Therefore, asphaltic cements with lower VOC/SVOC emissions, as approved by the SJVAPCD, shall be used to the extent feasible. 2) To reduce VOC emissions, periodic burner tune-ups shall be implemented. 3) Prior to issuance of a building permit for the proposed Asphalt Plant, project plans shall show that mixing drum vapors will be routed back to the dryer burner. Implementation of this provision shall be verified by Imperial County Building Inspectors prior to authorizing operation.	LTS
BIOLOGICAL RESOURCES			
Impact 4.4-1: Have an adverse effect, directly or indirectly, on special-status plant or wildlife species on the Plant Site or Quarry Site during mining operations.	PS	**Mitigation Measure 4.4-1a:** Burrowing Owl A pre-construction clearance survey for burrowing owl shall be conducted on the Quarry Site prior to disturbing any grasslands in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (dated March 7, 2012). The first survey shall be conducted at least 14 days prior to the initiation of construction of the aggregate plant and/or of each mining phase and the second survey shall be conducted within 24 hours of the start of construction of the aggregate plant and/or of each mining phase to ensure burrowing owl remain absent from the Quarry Site. If	LTS

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		burrowing owls are found to occupy the Quarry Site grasslands at the time of the clearance survey, a relocation plan shall be developed, approved by CDFW, and implemented prior to development of any Quarry Site grasslands. **Mitigation Measure 4.4-1b:** Western Pond Turtle and Western Spadefoot Pre-construction clearance surveys within the boundaries of the Quarry Site shall be conducted no more than 14 days prior to removal of a temporary pond to be removed so that the aggregate or hardrock below the pond can be mined. A combination of visual and trapping surveys by a CDFW qualified biologist may be performed. A pond cannot be left elevated above the surrounding excavation, as a result avoidance of occupied habitat is not feasible. Therefore, if the species is determined to be present in work areas, the biologist with approval from CDFW may capture turtles and spadefoot prior to construction activities and relocate them to nearby, suitable habitat near the Quarry Site. Exclusion fencing should then be installed, if feasible, to prevent turtles and spadefoot from reentering the work area. For the duration of work to remove the temporary pond, the biologist shall conduct at least weekly follow-up visits to monitor effectiveness and take appropriate corrective action if protection measures are not adequate. **Mitigation Measure 4.4-1c:** Nesting Birds If the initiation of construction at the Plant Site or the initiation of a mining phase as shown on the Plant Site Mining Plan (Figure 2-7) will occur between February 1	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		and August 31, a pre-construction clearance survey for nesting birds, including the above noted raptor species (Swainson's hawk, bald eagle, red-tailed hawk and white-tailed kite) and the tricolored blackbird (Agelaius tricolor) should be conducted by a qualified biologist within three (3) days of the start of any vegetation removal or ground disturbing activities within the immediate area of the mining phase where construction is to be initiated and as well as within a 50-foot buffer of such areas to ensure that no nesting birds will be disturbed during construction. As shown on Exhibit 5 in Appendix E-1, "Plant Site Habitat Assessment" there are no trees suitable for nesting at the Plant Site for the above noted raptor species (Swainson's hawk, bald eagle, red-tailed hawk and white-tailed kite) except along Friant Road and outside the perimeter of the survey area. Therefore, the survey for the raptor species shall be limited to the initiation of construction along Friant Road and outside the perimeter of the survey area. If the initiation of construction at the new plant at the Quarry Site or the initiation of a mining phase as shown on the Quarry Site Mining Plan (Figure 2-8) will occur between February 1 and August 31, a pre-construction clearance survey for nesting birds, including the above noted raptor species (Swainson's hawk, bald eagle, red-tailed hawk and white-tailed kite) and the tricolored blackbird (Agelaius tricolor) should be conducted by a qualified biologist within three (3) days of the start of any vegetation removal or ground disturbing activities within the immediate area of the mining phase as shown on the Quarry Site Mining Plan (Figure 2-8) where construction	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		is to be initiated and as well as within a 50-foot buffer of such areas to ensure that no nesting birds will be disturbed during construction. As shown on Exhibit 5 in Appendix E-2, "Quarry Site Habitat Assessment" there are no trees suitable for nesting for the above noted raptor species except along the west side of the project next to the river. Therefore, the survey for the raptor species shall be limited to the initiation of construction along the west side of the project next to the river. The biologist who conducted the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities shall stay outside of a 300-foot buffer around the active nest. For listed and raptor species, this buffer shall be expanded to 500 feet. A biological monitor shall be present to delineate the boundaries of the buffer area and monitor the active nest to ensure that nesting behavior is not adversely affected by construction activities. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur. Criteria related to the amount and duration of nest monitoring that will be required if an active avian nest is found are as follows: • If an active nest is found and construction will remain outside of a 300/500-foot buffer from the nest, the Biologist shall watch the nest for at least 15 minutes during construction to determine if the	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		nesting birds are disturbed by construction activities. If the birds appear distressed or behave aggressively toward the construction, a greater avoidance buffer shall be implemented and watched by the Biologist again. Once a suitable buffer has been determined to be effective, the Biologist may decide whether ongoing nest monitoring is warranted. • If an active nest is found and construction will occur within 300/500 feet of the active nest for multiple weeks, the nest shall be checked at least on a weekly basis to determine if its status has changed. The Biologist shall check the nest a week after construction has left the area in order to document that the nesting activity continues to proceed successfully. • If the nest of a listed or fully protected species is found within a survey buffer, the CDFW will be notified within 24 hours for coordination of any additional monitoring requirements.	
Impact 4.4-2: Have an adverse effect, directly or indirectly, on special-status wildlife species in riparian habitat surrounding the Plant Site and Quarry Site during mining operations.	LTS	None required.	
Impact 4.4-3: Have an adverse effect, directly or indirectly, on special-status plant or wildlife species on the plant site or quarry site after the completion of mining and reclamation.	LTS	None required.	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact 4.4-4: Have a substantial adverse effect on any riparian habitat or other sensitive natural community.	PS	Implement Mitigation Measures 4.10-1 and 4.3-2a, -2b, and -2c.	LTS
Impact 4.4-5: Have an adverse effect on protected wetlands or waters of the state.	LTS	None required.	
Impact 4.4-6: Interfere with native resident or migratory fish or wildlife species movement, corridors, or nursery sites.	LTS	None required.	
Impact 4.4-7: Conflict with local policies or ordinances protecting biological resources.	PS	Implement Mitigation Measures 4.3-2a, 4.3-2b, 4.3-2c, 4.4-1a, 4.4-1b, 4.4-1c, and 4.13-6	LTS
CULTURAL RESOURCES			
Impact 4.5-1: Substantial adverse change in the significance of a historical resource pursuant to CCR Section 15064.5.	LTS	None required.	
Impact 4.5-2: Substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5.	PS	**Mitigation Measure 4.5-2:** Inadvertent Discovery of Archaeological Resources If prehistoric or historic-era cultural resources are encountered during project activities, all ground-disturbing activities within 50 feet of the find shall cease. The qualified archaeologist shall evaluate the significance of the resources and recommend appropriate treatment measures. Per CEQA Guidelines Section 15126.4(b)(3)(A), project redesign and preservation in place shall be the preferred means to avoid impacts too significant to archaeological sites. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with Fresno County, which may include data recovery or other appropriate measures. Fresno County	LTS

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited curational facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to Fresno County and to the Southern San Joaquin Valley Information Center. Construction can recommence based on direction of the qualified archaeologist and with concurrence from the County.	
Impact 4.5-3: Disturb human remains, including those interred outside of formal cemeteries.	PS	**Mitigation Measure 4.5-3:** Inadvertent Discovery of Unmarked Burials If human remains are uncovered during project activities, the project operator shall immediately halt work on the site, contact the Fresno County Coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.4 (e)(1). If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) will be notified, in accordance with Health and Safety Code Section 7050.5(c) and Public Resources Code (PRC) 5097.98 (as amended by Assembly Bill 2641). The NAHC shall designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98, and the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by	LTS

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		further development activity until the landowner has discussed and conferred, as prescribed in PRC Section 5097.98, with the MLD regarding their recommendations for the disposition of the remains, taking into account the possibility of multiple human remains.	
ENERGY			
Impact 4.6-1: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.	PS	Implement Mitigation Measures 4.3-2 and 4.8-1	LTS
Impact 4.6-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	None required.	
GEOLOGY AND SOILS			
Impact 4.7-1: Exposure or people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, as a result of rupture of a known fault.	NI	None required.	
Impact 4.7-2: Exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, as a result of strong seismic ground shaking or as a result of seismically induced liquefaction, lateral spreading, or settlement.	LTS	None required.	
Impact 4.7-3: Exposure of people or structures to potential substantial adverse effects as result of landslides.	LTS	None required.	
Impact 4.7-4: Result in substantial soil erosion	LTS	None required.	
Impact 4.7-5: Result in the substantial loss of topsoil.	LTS	None required.	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact 4.7-6: Result in slope instability at the Plant Site.	PS	**Mitigation Measure 4.7-6:** Plant Site Slope Stability Monitoring The operator of the Rockfield Quarry (Operator) shall retain a County-approved qualified engineering geologist or geotechnical engineer experienced in evaluating the stability of slopes in alluvial materials. The engineering geologist or geotechnical engineer shall develop an inspection and reporting program that would be implemented at the Plant Site. In general, the interim mining slopes as well as perimeter slopes should be periodically inspected, and recommendations for the reconfiguration of mining slope gradients, dewatering measures, and localized stabilizations should be developed as dictated by the exposed conditions. The engineering geologist or geotechnical engineer shall document the results of the inspection and any recommendations, and the Operator shall submit the inspection report to the County within 30 days following the inspection. The inspection report shall describe the subsurface materials and groundwater conditions observed and shall compare the observed conditions relative to those identified in the Plant Site geotechnical evaluation completed for the revised reclamation plan by Tetra Tech in 2021 ("Stability Assessment Perimeter Mining Slopes"). The Plant Site geotechnical evaluation shall be appended to the Mitigation Monitoring and Reporting Program and shall be incorporated into the conditions of approval for the project. If the conditions vary from the geotechnical evaluation document characterization, the engineering geologist or geotechnical engineer shall evaluate whether the changes would have	LTS

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		an adverse impact on slope stability, and, if so, provide feasible recommendations to mitigate the slope stability concerns to achieve a minimum static factor of safety of 1.3 and a pseudo-static (seismic) factor of safety greater than 1.0. Recommendations shall be implemented within 6 months by the Operator, if feasible, otherwise no later than one year from the publishing of the recommendations.	
Impact 4.7-7: Result in slope instability at the Quarry Site	PS	**Mitigation Measure 4.7-7a:** Quarry Site Slope Stability Monitoring The operator of the Rockfield Quarry (Operator) shall retain a County-approved qualified engineering geologist or geotechnical engineer experienced in evaluating the stability of slopes in both hard rock and alluvial materials. The engineering geologist or geotechnical engineer shall develop an inspection and reporting program that would be implemented at the Quarry Site. In general, the interim mining slopes as well as perimeter slopes should be periodically inspected, and recommendations for the reconfiguration of mining slope gradients, dewatering measures, and localized stabilizations should be developed as dictated by the exposed conditions. It is anticipated that the inspections will be more frequent until a comprehensive and reliable geologic and groundwater model of the site is developed. The survey and monitoring program should at least include the following: • Groundwater regime characterization, including effects of dewatering on the aquifers and slope stability; • Rock mass discontinuities and structure characterization; and	LTS

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		• Slope stability evaluation, including kinematic failure analyses. The engineering geologist or geotechnical engineer shall document the results of each inspection and any recommendations, and the Operator shall submit the inspection report to the County within 30 days following the inspection. The inspection report shall describe the subsurface materials and groundwater conditions observed and shall compare the observed conditions relative to those identified in the Quarry Site geotechnical valuations completed for the revised reclamation plan by Tetra Tech in 2019 and 2021 ("Geological and Geotechnical Assessment Report" and "Response to Peer Review Comment, Geological and Geotechnical Assessment Report"). The Quarry Site geotechnical evaluations shall be appended to the Mitigation Monitoring and Reporting Program. If the conditions vary from the geotechnical evaluation documents characterization, the engineering geologist or geotechnical engineer shall evaluate whether the changes would have an adverse impact on slope stability or groundwater, and, if so, provide feasible recommendations to mitigate the slope stability concerns to achieve a minimum static factor of safety of 1.5 and a pseudo-static (seismic) factor of safety greater than 1.1. Recommendations shall be implemented within 6 months by the Operator, if feasible, otherwise no later than one year from the publishing of the recommendations.	

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		Mitigation Measure 4.7-7b: Quarry Site Kinematic Analyses During the mining excavations, the County-approved qualified engineering geologist or geotechnical engineer identified in Mitigation Measure 4.4-7a shall carry out periodic field surveys of structural geologic data and shall apply this information to kinematic analyses of the quarry pit. Initially, during the first year of the mining in the bedrock, the field survey shall be carried out every 6 months. After that, during the Phase 1 mining, the mapping shall be carried out every time the excavation exposes an area of approximately 50 vertical feet and 1,000 horizontal feet of previously unmapped slope. This mapping frequency shall continue until a robust geologic model is developed and verified. Subsequent mapping intervals may be increased to about 1 to 2 years, depending on the exposed conditions. If/when the geologic conditions are found to be consistent as mining progresses, the County shall be notified, and the field mapping and kinematic analysis program may be entirely phased out. As the mapping proceeds, structural domains (i.e., portions of the rock mass with similar patterns of rock mass discontinuities) shall be identified and appropriate kinematic analysis of various failure modes such as planar, wedge, and toppling type failures should be evaluated for each identified structural domain. The analysis shall take into account the groundwater conditions observations required under Mitigation Measure 4.4-7c. The mapping and the associated	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		quantitative database, interpretations, kinematic analyses, failure potential assessment, and any appropriate recommendations to prevent kinematic-type failure shall be summarized in a written report after the completion of each mapping mobilization and submitted to the County by the Operator within 30 days of the completion of each field survey. The report shall also include a summary of the groundwater conditions observations required under Mitigation Measure 4.4-7c. Recommendations shall be implemented within 6 months by the Operator, if feasible, otherwise no later than one year from the publishing of the recommendations. **Mitigation Measure 4.7-7c:** Quarry Site Groundwater Conditions The County-approved qualified engineering geologist or geotechnical engineer identified in Mitigation Measures 4.7-7a and 4.7-7b shall conduct observations of groundwater conditions relevant to slope stability along with the geologic observation of kinematic conditions carried out in support of Mitigation Measure 4.4-7b. These observations shall focus on the potential presence of: • Artesian conditions; • Preferential seepage paths; and • Piping conditions. To assist with these observations, a series of piezometers shall be installed within the hard to very hard intact granitic rock. Although there are currently seven monitoring wells in the quarry area completed within the intact rock, these wells cover the full interval to be mined. As such, they do not allow for the observation of	

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		differences in water pressures at different depths or within different groups of fractures. At least four additional piezometer clusters shall be installed as described below: • Two locations spaced equally between MW-1 and MW-2 along the westerly perimeter of the quarry pit along the San Joaquin River; • One location at the eastern boundary near the entry point from Friant Road; and • One location at the southwest limit of the project area between MW-2 and MW-7. The installations shall be nested to establish at least 3 monitoring intervals within the intact bedrock. Each interval shall be about 100 feet long with the shallowest interval extending from the top of the intact bedrock to a depth of about 200 feet, the second interval extending from a depth of approximately 200 feet to approximately 300 feet, and the third interval extending from approximately 300 feet to approximately 400 feet. In no case shall the screened interval for each piezometer section overlap with the interval above or below. Additional groundwater monitoring intervals and/or locations may be required depending on the actual groundwater conditions encountered during mining. The field observations shall also include assessment of seepage conditions in the mined bedrock slopes, if any are found to occur. Specifically, seepage conditions shall be evaluated that may indicate local or more extensive rock slope instability due to local water pressure conditions. Documentation of groundwater observations shall be	

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		submitted to the County as required under Mitigation Measure 4.7-7b.	
Impact 4.7-8: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	LTS	None required.	
Impact 4.7-9: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	LTS	None required.	
Impact 4.7-10: Directly or indirectly destroy a unique geological feature.	NI	None required.	
Impact 4.7-11: Directly or indirectly destroy a unique paleontological resource.	PS	**Mitigation Measure 4.7-11:** Paleontological Resources Prior to initiation of ground disturbance, the operator of the Rockfield Quarry (Operator) shall develop and submit to the County Planning Department for review and approval a project-specific paleontological resource impact mitigation program (PRIMP) for the Plant Site and Quarry Site. The PRIMP shall only be implemented at the Quarry Site until mining of any remaining alluvial deposits is complete. The PRIMP shall not be required at the Quarry Site if the alluvial deposits remaining on the site are mined under the existing CUP. The PRIMP should be developed by a professional paleontologist (Project Paleontologist, Principal Investigator) who meets Society of Vertebrate Paleontology (2010) qualification standards. The PRIMP will specify the steps to be taken to mitigate the potential of mining excavation and reclamation-related ground disturbing activities to destroy paleontological resources. At a minimum, these measures	LTS

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		shall include development of a Worker's Environmental Awareness Training Program that shall be presented in-person to all field personnel prior to the start of each phase of project-related earth-moving activities, as well as to any new field personnel prior to beginning work on the site. The following directive shall be included in employee and contractor training materials: "The subsurface of the quarry may be sensitive for paleontological resources in the alluvial (non-bedrock) materials. If paleontological resources are encountered during subsurface disturbance, all ground disturbing activities within 100 feet [or another appropriate distance specified in the PRIMP] of the find shall be redirected and a professional paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Employees and contractors shall not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and such trace fossil evidence of past life as animal tracks. Employee/contractor acknowledges and understands that excavation or removal of paleontological material is prohibited by law and constitutes a misdemeanor under California Public Resources Code, Section 5097.5." A copy of the training materials and documentation of completed training shall be provided to the County for review upon request.	

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		The PRIMP shall specify whether field monitoring during earthmoving activities is required, and, if so, the frequency of required monitoring (i.e., full-time, spot-check, etc.). Approximately 96 acres of the Plant Site have already been partially mined to depths of between 5 to 32 feet bgs and backfilled. (See 2.4.2.1.) Any monitoring (i.e., spot-check) should be limited to mining of the remaining undisturbed alluvial material. The PRIMP shall require that if a paleontological resource is encountered during earthmoving activities, the Operator shall notify the County and all activity within 100 feet (or another appropriate distance specified in the PRIMP) of the find shall halt until it can be evaluated by a professional paleontologist. The paleontologist shall evaluate the resource and determine its significance. If significant, the paleontologist shall notify the County and the Operator. The PRIMP shall provide details about fossil collection, analysis, and preparation for permanent curation at an approved repository. Lastly, the PRIMP shall describe the different reporting standards to be used for negative or positive findings during construction activities.	
GREENHOUSE GAS EMISSIONS			
Impact 4.8-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	PS	**Mitigation Measure 4.8-1:** Asphalt Plant Performance Standards The asphalt plant dryer drum and mixing chamber shall be separated so that dryer exhaust gases do not contact liquid asphalt and premium efficiency electric motors with exhaust fan motors shall be equipped with variable frequency speed control. These specifications shall be shown on project plans and submitted to the San Joaquin Air Pollution Control District as part of the application for	LTS

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		Authority to Construction the proposed asphalt plant. Air district staff will verify implementation of this measure as part of the permit review process.	
Impact 4.8-2: Consistency with applicable GHG plans, policies, or regulations.	LTS	None required.	
HAZARDS AND HAZARDOUS MATERIALS			
Impact 4.9-1: Create a significant hazard to the public or the environment through the routing transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during construction, relocation, and/or demolition activities.	PS	**Mitigation Measure 4.9-1:** Survey for PCB-Containing Building Materials Prior to the County issuing a demolition permit for the aggregate processing plant, the operator of the Rockfield Quarry shall prepare a comprehensive Hazardous Building Materials Survey for the project site signed by a qualified environmental professional. The Hazardous Building Materials Survey shall document the presence, or lack thereof, of PCB-containing equipment and materials. The Hazardous Building Materials Survey shall include abatement specifications for the stabilization and/or removal of the identified hazardous building materials in accordance with all applicable laws and regulations. The demolition contractor(s) shall implement the abatement specifications and submit to the County evidence of completion of abatement activities prior to demolition of the existing structure.	LTS
Impact 4.9-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials transported, used, or disposed of during mining or final reclamation.	PS	Implement Mitigation Measure 4.10-1	LTS

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Impact 4.9-3: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials transported, used, or disposed of post-reclamation.	LTS	None required.	
Impact 4.9-4: Create a significant hazard to the public or the environment through flyrock generated by the use of blasting agents on the Quarry Site.	PS	Implement the Flyrock Mitigation Plan established by the Blasting Protocols as required by Mitigation Measure 4.10-1.	LTS
Impact 4.9-5: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LTS	None required.	
Impact 4.9-6: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	LTS	None required.	
HYDROLOGY AND WATER QUALITY			
Impact 4.10-1: Violate surface water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality at the Plant Site or Quarry Site during mining and reclamation.	PS	**Mitigation Measure 4.10-1:** Blasting Protocols The operator of the Rockfield Quarry shall at all times implement the requirements of the "Blasting Protocols" developed October 27, 2020, and updated September 8, 2021, by Vibra-Tech Engineers, Inc. The Blasting Protocols shall be appended to the Mitigation Monitoring and Reporting Program and shall be incorporated into the conditions of approval for the project.	LTS
Impact 4.10-2: Violate surface water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality at the Plant Site after the completion of mining and reclamation.	LTS	None required.	

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Impact 4.10-3: Violate surface water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality at the Quarry Site after the completion of mining and reclamation.	LTS	None required.	
Impact 4.10-4: Violate groundwater quality standards or otherwise substantially degrade groundwater quality at the Plant Site due to activities conducted during mining and reclamation.	LTS	None required.	
Impact 4.10-5: Violate groundwater quality standards or otherwise substantially degrade groundwater quality at the Plant Site due to the ponding of water in the excavation.	PS	**Mitigation Measure 4.10-5a:** Plant Site Pond Adaptive Management Program The operator of the Rockfield Quarry shall implement an adaptive management program at the Plant Site that includes monitoring, comparison of monitoring results with action levels, and subsequent implementation of mitigation measures if the action levels are exceeded. The impact does not have the potential to occur until after mining on part or all of the Plant Site area is completed, and water is allowed to fill all or a part of the excavated mine pit. Therefore, monitoring under the adaptive management program shall begin when the quarry operator allows water to begin to fill all or part of the excavated mine pit. At the latest, monitoring shall begin at the completion of mining at the Plant Site. A qualified professional shall be responsible for the monitoring and reporting to be conducted under the adaptive management program. The qualified professional's qualifications shall be provided to the County prior to the start of the monitoring under the	LTS

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		adaptive management program. Every six months, the qualified professional shall conduct field measurements for the parameters, and associated action levels, listed below. • pH>8.5 • Conductivity >700 mg/L • Temperature (no action level) • Dissolved oxygen (DO) <8 mg/L or <70% of saturation • Oxidation-reduction potential (ORP) <0 These parameters are general indicators of water quality and the potential for reducing conditions to form that could mobilize naturally occurring iron and manganese and thereby degrade water quality. An annual report documenting the methodology and results of the sampling shall be submitted to Fresno County. The field measurements shall be conducted at two depths: (1) near the surface of the water and (2) near the bottom of the water column. If any of the action levels shown in the "Field Indicator Parameters" table are exceeded for two successive monitoring events, then water samples shall be collected from the Plant Site pond and submitted to an analytical laboratory for analysis of iron and manganese. If the iron concentration exceeds its secondary MCL and NPDES discharge limit of 300 ug/L, or manganese exceeds its secondary MCL and NPDES discharge limit of 50 ug/L mg/L, then the laboratory testing shall be completed again in six months to assess whether there are potential seasonal influences.	

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		If the iron and/or manganese levels do not consistently remain below their respective water quality standards, then the semiannual field monitoring shall continue. If no exceedances of the action levels shown in the "Field Indicator Parameters" table or of the iron and manganese water quality standards occur for a period of five years, then the water quality conditions in the reclaimed Plant Site pond shall be considered to have stabilized and no further monitoring shall be necessary. A final monitoring report shall be submitted to the County documenting the cessation of monitoring. If the iron and/or manganese levels persist for five consecutive years above their respective water quality standards, then the following mitigation actions shall be implemented: • Aeration or mechanical circulation of the water from the bottom of the pond to the surface of the pond. Reducing conditions that favor high pH values and low dissolved oxygen (DO) values, resulting in higher concentrations of iron and manganese, typically form at the bottom of ponds due to the breakdown of organic matter, such as dead aquatic or riparian vegetation. Aeration or mechanical circulation of the water from the bottom of the pond to the surface of the pond would better distribute DO throughout the water column and would minimize the formation of reducing conditions. • Additional Measures. If substantial amounts of submerged aquatic vegetation form within the pond, or riparian vegetation such as reeds and	

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		cattails form around the perimeter of the pond, and aeration or water circulation alone is insufficient to eliminate the reducing conditions, then further measures to minimize the vegetation would be implemented. Such measures may include physical removal by hand or mechanical equipment (e.g. dredging), growth prevention using physical barriers (e.g. tarps or bottom barriers) in areas of heavy growth, or use of approved terrestrial or aquatic herbicides if other methods are not feasible or effective. Monitoring results shall be reported to the County in an annual report that would be submitted at the end of the first quarter of every year. The annual report shall describe any measures that have been or are planned to be taken based on the monitoring results and provide an analysis of the effectiveness of the measures, and a description of any further recommended measures, as part of subsequent annual reports. **Mitigation Measure 4.10-5b:** Plant Site Pond Adaptive Management Program Funding Mechanism Prior to the completion of mining, the Operator shall establish a funding mechanism to provide a permanent funding source for the monitoring of the final reclaimed pond on the Plant Site. The funding mechanism shall be sufficient to cover costs associated with the annual monitoring and reasonably foreseeable actions that may be required to address oxygen reducing conditions, if necessary. The funding mechanism shall be managed by a third party approved by the Operator and County. The	

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		Operator shall submit for County review and approval, a proposed funding mechanism and cost basis. If conditions stabilize and no further monitoring is required, as described above in Mitigation Measure 4.10-5a, then the funding mechanism would be cancelled, and any funds returned to the Operator.	
Impact 4.10-6: Violate groundwater quality standards or otherwise substantially degrade groundwater quality at the Quarry Site during mining and reclamation.	PS	Implement Mitigation Measure 4.10.1	LTS
Impact 4.10-7: Violate groundwater quality standards or otherwise substantially degrade groundwater quality at the Quarry Site due to the ponding of water in the excavation.	LTS	None required.	
Impact 4.10-8: Substantially decrease groundwater supplies during mining operations and after the completion of reclamation at the Plant Site such that the project could interfere with existing groundwater supply wells.	LTS	None required.	
Impact 4.10-9: Substantially decrease groundwater supplies during mining operations and after the completion of reclamation at the Plant Site such that the project may impede sustainable groundwater management of the basin.	LTS	None required.	
Impact 4.10-10: Substantially decrease groundwater supplies during mining operations and after the completion of reclamation at the Quarry Site such that the project could interfere with existing groundwater supply wells.	PS	**Mitigation Measure 4.10-10a:** Quarry Site Groundwater Adaptive Management Program To assess any potential effect on the CSA 44C wells due to the proposed excavation of a hard rock quarry pit at the Quarry Site, monitoring shall be conducted in the nested	LTS

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		set of wells between the Northeast Pond and the CSA 44C wells, and in the CSA 44C wells themselves. The existing MW-3 well cluster, with individual wells completed in the alluvium, weathered rock, and hard rock, is appropriately located for this purpose. In addition, the data from the MW-3 well cluster provides a record of water level conditions at this location for several years prior to implementation of the project. Pumping and water level data from the CSA 44C wells has been provided by Fresno County to support the analysis in this EIR. Fresno County will continue to provide these data sets to the Operator for the purposes of implementing this Adaptive Management Program. Monitoring of the water levels in the MW-3 cluster shall be conducted using downhole pressure transducers with dataloggers. Dataloggers are already installed in the MW-3 wells. The dataloggers shall be programmed to record water levels at least once every six hours such that a range of static and pumping water level effects would be captured. The data shall be downloaded every six months for review and subsequent inclusion in annual mitigation monitoring reports. The annual mitigation monitoring reports shall be prepared by a Professional Geologist/Certified Hydrogeologist and submitted to Fresno County annually at the end of the first quarter of every year. The annual report shall describe any additional measures that have been or are planned to be taken based on the monitoring results, in accordance with this adaptive management program. The first annual report shall be completed at the end of the first quarter of the year after the use permit becomes active and shall describe the baseline water level ranges at the MW-3	

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		cluster for the alluvium, weathered rock, and hard rock, specifically identifying conditions during drought periods, wet periods, and seasonal fluctuations. If the monitoring data indicate that groundwater levels in any of the monitored wells drop such that the available water column decreases by more than 15%, then a significant impact to available groundwater supply will have occurred. The data from the MW-3 well cluster shall be evaluated to verify whether the impact is specific to the weathered rock and/or hard rock and is not due to other unrelated factors, such as drought, a reduction in regional groundwater recharge (for example, by changes in operating practices along the Friant Kern Canal), or use of groundwater by future developments located upgradient to the north and northeast of the Quarry Site and CSA 44C wells. If the additional assessment confirms that a decrease in water levels greater than 15% is exclusively attributable to mine dewatering, then corrective measures would be implemented. "For this analysis, a factor of safety has been applied, such that a criterion of 15% reduction in the water column is used to define the condition where a potentially significant impact may occur to the production capacity of a well. Use of the 15% criterion is conservative (i.e., protective of groundwater resources) not only due to the applied factor of safety, but also because it accounts for shallow wells or wells with a small water column that may be at a greater distance from the quarry. Other approaches that are based only on the total amount of drawdown do not	

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		take into consideration the effects to shallow wells at greater distances from the dewatering location (i.e., the quarry)" (EMKO, October 3, 2023). The initial corrective measure would be to divert additional water from the mining excavation into the Northeast Pond or to a recharge trench to be constructed along the northeast side of the Quarry Site to enhance recharge in the area of CSA 44C wells. The rate of pumping into the Northeast Pond or recharge trench would be increased until the water level in the MW-3 well cluster and the CSA 44C wells recovers to a point between baseline and 15% below baseline. If, during mining, all available water from dewatering is being pumped to the Northeast Pond or recharge trench and the water level in the MW-3 well cluster remains 15% or more below the baseline elevations, then mining could not progress to greater depths in the quarry. If such a condition occurred, then the Reclamation Plan would be amended to reflect the adjusted depth of the quarry. For wells completed west of the Quarry Site, and for the San Joaquin River, the existing MW-1 monitoring well cluster provides an appropriate monitoring location for the purposes of this adaptive management plan. Water levels have been measured in the three wells at the MW-1 cluster since August 2017 using downhole pressure transducers with dataloggers. The water levels recorded in the MW-1 well cluster from 2017 until the time that mining and dewatering in the weathered rock begins after approval of the project will be used to define the baseline groundwater level conditions. Baseline water level ranges	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		will be identified for the alluvium, weathered rock, and hard rock, specifically identifying conditions during drought periods, wet periods, and seasonal fluctuations, and, similar to the MW-3 well cluster, these baseline conditions shall be documented in the first annual report. If access can reasonably be gained to any of the five private wells in Table 4.10-9 located to the west of the Quarry Site from the private owners, then those wells should also become part of the monitoring program. Groundwater levels would continue to be recorded using downhole pressure transducers with dataloggers, programmed to record water levels at least once every six hours such that a range of static and pumping water level effects would be captured. The data would be downloaded every six months for review and subsequent inclusion in annual mitigation monitoring reports. The annual report would also describe any additional measures that have been or are planned to be taken based on the monitoring results, in accordance with this adaptive management program. If the monitoring data indicate that groundwater levels in any of the monitored wells drop such that the available water column decreases by more than 15%, then a significant impact to available groundwater supply will have occurred. This conclusion would be confirmed by analysis of data from the MW-1 well cluster to verify that the impact is specific to the weathered rock and/or hard rock and is not due to other unrelated factors, such as drought, future developments in the area that rely on groundwater, or a reduction in regional groundwater recharge (for example, by changes in operating practices	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		on the San Joaquin River or the Friant Kern Canal). For the San Joaquin River, the impact must be specific to both the alluvium and weathered rock aquifer zones. If the additional assessment confirms that the decrease in water levels is primarily due to mine dewatering, then corrective measures would be implemented. The initial corrective measure would be to divert additional water from the mining excavation into the recharge trench adjacent to the San Joaquin River on the west side of the Quarry Site. The rate of pumping into the recharge trench would be increased until the water column in the MW-1 well cluster and any monitored private wells west of the Quarry Site recover to within 85% or more of baseline levels. If, during mining, all available water from dewatering is being pumped to the recharge trench and the water column in the MW-1 well cluster remains below 85% of baseline elevations, then mining could not progress to greater depths in the quarry. If such a condition occurred, then the Reclamation Plan would be amended to reflect the adjusted depth of the quarry. If mining progresses to the full approved depth without causing a potentially significant impact to nearby wells or flows in the San Joaquin River, then monitoring in the MW-1 and MW-3 well clusters will continue for at least 3 years, to include at least two below-normal rainfall years or one critically dry year, as defined by DWR. Dewatering will cease once mining is completed, so groundwater levels will begin to recover. During the post-mining monitoring period, the rate that water is pumped to the Northeast Pond and the recharge trenches will be reduced	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		proportionally in accordance with the rate that the water level in the pond recovers. If the drawdown in the MW-1 and MW-3 monitoring well clusters is less than 15% at the end of the monitoring period, then no further mitigation is required, monitoring can cease, and the related pumps, piping, and other equipment can be removed from the Quarry Site. However, if at the end of the monitoring period, the drawdown in the monitoring wells is greater than 15%, then pumping to the Northeast Pond, east recharge trench, and/or west recharge trench, as appropriate based on the post-mining monitoring data, must continue indefinitely to reduce the drawdown in the monitoring well clusters below the 15% criterion. **Please see Section 4.10 for a footnote on this measure.* **Mitigation Measure 4.10-10b:** Quarry Site Groundwater Adaptive Management Program Funding Mechanism Prior to the completion of mining, the Operator shall establish a funding mechanism to provide a permanent funding source for the initial 3 years of monitoring of groundwater levels in the MW-1 and MW-3 well clusters, and review of CSA 44C well monitoring data from the County, after mining ceases and dewatering is no longer occurring in the quarry pit. The funding mechanism shall be sufficient to cover costs associated with the annual monitoring and reasonably foreseeable actions that may be required to address excessive drawdown, including continuing to pump water to the Northeast Pond and recharge trenches indefinitely, if necessary. The Operator shall submit for review and approval by the Agency Director, or designee, ("Director") a proposed funding	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		mechanism (e.g., a bond) and cost basis to secure costs related to the required Quarry Site groundwater adaptive management activities as described in Mitigation Measure 4.10-10a, above. The funding mechanism shall be held by the County or held and managed by a third party approved by the Operator and County, as determined by the Director. If conditions stabilize and no further monitoring is required, as described in Mitigation Measure 4.10-10a, then the funding mechanism would be cancelled, and any funds returned to the Operator.	
Impact 4.10-11: Substantially decrease groundwater supplies during mining operations and after the completion of reclamation at the Quarry Site such that the project may impede sustainable groundwater management of the basin.	LTS	None required.	
Impact 4.10-12: Substantially decrease groundwater levels in a manner that would result in the flow of substantial volumes of water from the San Joaquin River to the Quarry Site.	PS	Implement Mitigation Measures 4.10-10a and 4.10-10b	LTS
Impact 4.10-13: Interfere substantially with groundwater recharge at the Plant Site and Quarry Site such that the project may impede sustainable groundwater management of the basin.	LTS	None required.	
Impact 4.10-14: Alter drainage patterns in a manner which would result in substantial erosion or siltation on or off site.	NI	None required.	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact 4.10-15: Alter drainage patterns in a manner which would result in on or off-site flooding or exceed the capacity of the existing storm drainage system.	NI	None required.	
Impact 4.10-16: Alter drainage patterns in a manner which would impede or redirect flood flows.	NI	None required.	
Impact 4.10-17: Release of pollutants in flood hazard, tsunami, or seiche zones due to project inundation.	LTS	None required.	
LAND USE AND PLANNING			
Impact 4.11-1: Physically divide an established community.	NI	None required.	
Impact 4.11-2: Conflict with land use plans, policies, and regulations.	LTS	None required.	
MINERAL RESOURCES			
Impact 4.12-1: Loss of availability of a known mineral resource or locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	LTS	None required.	
NOISE			
Impact 4.13-1: Generate a substantial temporary or permanent increase in ambient noise levels from project-generated traffic in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	LTS	None required.	
Impact 4.13-2: Generate a substantial temporary or permanent increase in ambient noise levels from Plant Site stage 1 operations in excess of	PS	**Mitigation Measure 4.13-2:** Plant Site Noise Reduction	LTS

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
standards established in the local general plan or noise ordinance, or applicable standards of other agencies.		The operator of the Rockfield Quarry (Operator) shall implement one or more of the following measures to reduce noise from Plant Site operations: 1. Line aggregate hopper drop-points with heavy urethane sheets. 2. Ensure that all processing area conveyors are properly lubricated at all times. 3. Equip all mobile plant area equipment with acoustic growler-type backup warning systems, rather than conventional beepers. 4. Suspend acoustic curtains around the aggregate processing plant crushers and screen decks (i.e. the loudest components of the processing plant). 5. Install an acoustic silencer on the asphalt plant bag house exhaust fan. 6. Suspend acoustic curtains around the asphalt plant burner. 7. Following implementation of the appropriate noise control measures identified above, noise monitoring shall be conducted to confirm the effectiveness of noise control measures and compliance with the applicable noise standards. Noise monitoring shall be conducted by a qualified noise specialist within 1 month of the initiation of excavation and operation of the hot-mix asphalt plant on the Plant Site. Monitoring locations and estimated noise levels at the nearest sensitive receptors to the Plant Site shall be consistent with the noise monitoring locations and methodology included in the "Environmental Noise and Vibration Assessment, July 26, 2021." Changes from the locations and methodology that are	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		determined to be necessary by the qualified noise specialist shall be documented. If noise levels are found to exceed the thresholds, additional noise reduction measures shall be implemented, and monitoring conducted until the thresholds achieve acceptable levels. Quarterly reports of noise monitoring and reduction efforts shall be developed and submitted to the County until noise monitoring shows that Plant Site noise levels have been reduced to below the applicable thresholds. If complaints regarding noise generated by Plant Site operations are received by the County, additional noise monitoring shall be conducted in accordance with the procedures described above.	
Impact 4.13-3: Generate a substantial temporary or permanent increase in ambient noise levels from Quarry Site stage 1 and 2 operations and final reclamation in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	PS	**Mitigation Measure 4.13-3:** Quarry Site Noise Reduction The operator of the Rockfield Quarry (Operator) shall implement one or more of the following measures to reduce noise from Quarry Site operations: 1. Limit excavation operations to daytime hours (6 a.m. to 7 p.m.). 2. Limit aggregate processing plant operations to daytime hours. 3. Limit asphalt and ready-mix operations to daytime hours unless construction contracts specifically require the delivery of materials during nighttime hours. 4. Line aggregate hopper drop-points with heavy urethane sheets. 5. Ensure that all processing area conveyors are properly lubricated at all times.	LTS

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		6. Utilize electric power rather than generators to the maximum extent feasible. If generators must be used, ensure that they are located within acoustic enclosures or property shielded from nearby residences through structures or aggregate stockpiles. 7. Equip all mobile plant area equipment with acoustic growler-type backup warning systems, rather than conventional beepers. 8. Suspend acoustic curtains around the aggregate processing plant crushers and screen decks (i.e. the loudest components of the processing plant). 9. Install acoustic silencers on the asphalt plant bag house exhaust fan. 10. Suspend acoustic curtains around the asphalt plant burner. 11. Locate aggregate stockpiles to provide screening of processing area noise sources from view of nearby residences 12. Following implementation of the appropriate noise control measures identified above, noise monitoring shall be conducted to confirm the effectiveness of noise control measures and compliance with the applicable noise standards. Noise monitoring shall be conducted by a qualified noise specialist within 1 month of the initiation of the start of operation of the aggregate processing plant at the Quarry Site. Monitoring locations and estimated noise levels at the nearest sensitive receptors to the Plant Site shall be consistent with the noise monitoring locations and methodology included in the "Environmental Noise	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		and Vibration Assessment, July 26, 2021." Changes from the locations and methodology that are determined to be necessary by the qualified noise specialist shall be documented. If noise levels are found to exceed the thresholds, additional noise reduction measures shall be implemented, and monitoring conducted until the thresholds achieve acceptable levels. Quarterly reports of noise monitoring and reduction efforts shall be developed and submitted to the County until noise monitoring shows that Quarry Site noise levels have been reduced to below the applicable thresholds. Similarly, within 1 month of the start of operation of the hot-mix asphalt plant, ready-mix cement plant, and portable recycle plant during Stage 2 operations at the Quarry Site, noise monitoring shall be conducted in accordance with the procedures described above. If complaints regarding noise generated by Quarry Site operations are received by the County during Stage 1 or Stage 2 operations, additional noise monitoring shall be conducted in accordance with the procedures described above.	
Impact 4.13-4: Generate a substantial temporary or permanent increase in ambient noise levels from Plant Site and Quarry Site final reclamation activities and post-reclamation in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	LTS	None required.	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact 4.13-5: Generate substantial groundborne vibration or groundborne noise from mining operations and reclamation activities (excluding blasting).	LTS	None required.	
Impact 4.13-6: Generate substantial groundborne vibration or airborne vibration as a result of blasting.	PS	**Mitigation Measure 4.13-6:** Blasting Protocols The operator of the Rockfield Quarry shall at all times implement the requirements of the "Blasting Protocols" developed October 27, 2020, and updated September 8, 2021, by Vibra-Tech Engineers, Inc. The Blasting Protocols shall be appended to the Mitigation Monitoring and Reporting Program and shall be incorporated into the conditions of approval for the project.	LTS
POPULATION AND HOUSING			
Impact 4.14-1: Induce substantial unplanned population growth in an area, either directly or indirectly.	LTS	None required.	
Impact 4.14-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.	NI	None required.	
PUBLIC SERVICES			
Impact 4.15-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire	LTS	None required.	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
protection, law enforcement, schools, parks, other public facilities.			
RECREATION			
Impact 4.16-1: Increase use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LTS	None required.	
Impact 4.16-2: Inclusion of recreational facilities or requiring the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	LTS	None required.	
TRANSPORTATION			
Impact 4.17-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	PS	**Mitigation Measure 4.17-1a:** Equitable Share Contributions—Friant Road and Willow Avenue (Existing Plus Project) The County of Fresno has collected equitable share contributions for future signalization of the intersection of Friant Road and Willow Avenue from other development projects. The project shall pay an equitable share of the cost of future signalization. **Mitigation Measure 4.17-1b:** Equitable Share Contributions—Pavement Conditions The project shall contribute an equitable share of pavement improvements to increase the pavement section to accommodate the traffic index values in Table 4.17-12. **Mitigation Measure 4.17-1c:** Equitable Share Contributions—Friant Road and Willow Avenue (5-Year Cumulative)	SU

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		The project shall pay an equitable share of the cost of future signalization of the Friant Road and Willow Avenue intersection. **Mitigation Measure 4.17-1d:** Equitable Share Contributions—Copper Avenue and Willow Avenue (5-Year Cumulative) The project shall pay an equitable share of the cost of the future widening and signalization of the Copper Avenue and Willow Avenue intersection. **Mitigation Measure 4.17-1e:** Equitable Share Contributions—SR 41 and Road 145 (15-Year Cumulative) The project shall pay an equitable share of the cost of future widening of the SR 41 and Road 145 intersection. **Mitigation Measure 4.17-1f:** Equitable Share Contributions—Road 206 and Road 145 Intersection (15-Year Cumulative) The project shall pay an equitable share of the cost of the future widening and signalization of the Road 206 and Road 145 intersection. **Mitigation Measure 4.17-1g:** Equitable Share Contributions—Friant Road and North Fork Road Intersection (15-Year Cumulative) The project shall pay an equitable share of the cost of future widening the Friant Road and North Fork Road intersection. **Mitigation Measure 4.17-1h:** Equitable Share Contributions—Friant Road and Quarry Site Access Intersection (15-Year Cumulative)	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Once County Annual Mine Inspections reveal the project has reached 2.65 MT per year (based on interpolation of peak-hour project traffic volumes between 2.0 and 3.0 MT per year as compared to the CMUTCD peak-hour warrant), the operator shall conduct annual traffic signal warrants analyses in accordance with the edition of the California Manual on Uniform Traffic Control Devices current at that time, or future equivalent as determined by the agency having jurisdiction over the intersection, to determine whether traffic signals are warranted at the intersection of Friant Road and the Quarry Site. Passenger Car Equivalent (PCE) volumes shall be used, queue lengths and number of vehicles in the queue should be documented, and the warrants studies should consider the exclusion of right turns as described in the CMUTCD. Traffic signals shall be installed if the traffic signal warrants analyses indicates that signals are warranted, and if approved by the agency having jurisdiction over the intersection. The project will be responsible for installing the traffic signals. **Mitigation Measure 4.17-1i:** Equitable Share Contributions—Friant Road and Plant Site Access Intersection (15-Year Cumulative) Once County Annual Mine Inspections reveal the project has reached 2.65 MT per year (based on interpolation of peak-hour project traffic volumes between 2.0 and 3.0 MT per year as compared to the CMUTCD peak-hour warrant), the operator shall conduct annual traffic signal warrants analyses in accordance with the edition of the California Manual on Uniform Traffic Control Devices	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		current at that time, or future equivalent as determined by the agency having jurisdiction over the intersection, to determine whether traffic signals are warranted at the intersection of Friant Road and the Plant Site. Passenger Car Equivalent (PCE) volumes shall be used, queue lengths and number of vehicles in the queue should be documented, and the warrants studies should consider the exclusion of right turns as described in the CMUTCD. Traffic signals shall be installed if the traffic signal warrants analyses indicates that signals are warranted, and if approved by the agency having jurisdiction over the intersection. The project will be responsible for installing the traffic signals. The analyses shall take into consideration the future elimination of the Plant Site. **Mitigation Measure 4.17-1j:** Equitable Share Contributions—Friant Road and Willow Avenue (15-Year Cumulative) The intersection of Friant Road and Willow Avenue will require signalization to operate at acceptable levels of service in the 2040 cumulative scenario. The project shall pay an equitable share of the cost of future signalization. **Mitigation Measure 4.17-1k:** Equitable Share Contributions—Copper Avenue and Willow Avenue (15-Year Cumulative) The project shall pay an equitable share of the cost of the future widening and signalization of the Copper Avenue and Willow Avenue intersection.	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Mitigation Measure 4.17-1l: Equitable Share Contributions—SR 41 and Road 145 (Year 2040 Cumulative) The project shall pay an equitable share of the cost of future widening of the SR 41 and Road 145 intersection. **Mitigation Measure 4.17-1m:** Equitable Share Contributions—Road 206 and Road 145 (Year 2040 Cumulative) The project shall pay an equitable share of the cost of the future widening and signalization of the Road 206 and Road 145 intersection. **Mitigation Measure 4.17-1n:** Equitable Share Contributions—Friant Road and North Fork Road Intersect (Year 2040 Cumulative) The project shall pay an equitable share of the cost of future widening of the Friant Road and North Fork Road intersection. **Mitigation Measure 4.17-1o:** Equitable Share Contributions—Friant Road and Quarry Site (Year 2040 Cumulative) Once County Annual Mine Inspections reveal the project has reached 2.65 MT per year (based on interpolation of peak-hour project traffic volumes between 2.0 and 3.0 MT per year as compared to the CMUTCD peak-hour warrant), the operator shall conduct annual traffic signal warrants analyses in accordance with the edition of the California Manual on Uniform Traffic Control Devices current at that time, or future equivalent as determined by the agency having jurisdiction over the intersection, to	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		determine whether traffic signals are warranted at the intersection of Friant Road and the Quarry Site. Passenger Car Equivalent (PCE) volumes shall be used, queue lengths and number of vehicles in the queue should be documented, and the warrants studies should consider the exclusion of right turns as described in the CMUTCD. Traffic signals shall be installed if the traffic signal warrants analyses indicates that signals are warranted, and if approved by the agency having jurisdiction over the intersection. The project will be responsible for installing the traffic signals. **Mitigation Measure 4.17-1p:** Equitable Share Contributions—Friant Road and Plant Site (Year 2040 Cumulative) Once County Annual Mine Inspections reveal the project has reached 2.65 MT per year (based on interpolation of peak-hour project traffic volumes between 2.0 and 3.0 MT per year as compared to the CMUTCD peak-hour warrant), the operator shall conduct annual traffic signal warrants analyses in accordance with the edition of the California Manual on Uniform Traffic Control Devices current at that time, or future equivalent as determined by the agency having jurisdiction over the intersection, to determine whether traffic signals are warranted at the intersection of Friant Road and the Plant Site. Passenger Car Equivalent (PCE) volumes shall be used, queue lengths and number of vehicles in the queue should be documented, and the warrants studies should consider the exclusion of right turns as described in the CMUTCD. Traffic signals shall be installed if the traffic signal	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		warrants analyses indicates that signals are warranted, and if approved by the agency having jurisdiction over the intersection. The project will be responsible for installing the traffic signals. The analyses shall take into consideration the future elimination of the Plant Site. **Mitigation Measure 4.17-1q:** Equitable Share Contributions—Friant Road and Willow Avenue (Year 2040 Cumulative) The project shall pay an equitable share of the cost of future signalization of the Friant Road and Willow Avenue intersection. **Mitigation Measure 4.17-1r:** Equitable Share Contributions—Copper Avenue and Willow Avenue (Year 2040 Cumulative) The project shall pay an equitable share of the cost of future signalization of the Copper Avenue and Willow Avenue intersection.	
Impact 4.17-2: Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).	LTS	None required.	
Impact 4.17-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	None required.	
Impact 4.17-4: Result in inadequate emergency access.	LTS	None required.	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TRIBAL CULTURAL RESOURCES			
Impact 4.18-1: Substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or by the lead agency pursuant to criteria set forth in Public Resources Code Section 5024.1(c).	PS	Implement Mitigation Measures 4.5-2 and 4.5-3.	LTS
UTILITIES AND SERVICE SYSTEMS			
Impact 4.19-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	NI	None required.	
Impact 4.19-2: Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	LTS	None required.	
Impact 4.19-3: Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, otherwise impair the attainment of solid waste reduction goals, or conflict with federal, state, and local management and reduction statutes and regulations related to solid waste.	LTS	None required.	

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Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
WILDFIRE			
Impact: 4.20-1: Substantial Impairment of an Adopted Emergency Response Plan or Emergency Evacuation Plan.	LTS	None required.	
Impact: 4.20-2: Exacerbation of Wildfire Risks Due to Slope, Prevailing Winds, and Other Factors, That Could Thereby Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire.	PS	Implement Mitigation Measure 4.13-6.	LTS
Impact: 4.20-3: Installation or Maintenance of Associated Infrastructure (Such as Roads, Fuel Breaks, Emergency Water Sources, Power Lines or Other Utilities) That May Exacerbate Fire Risk or That May Result in Temporary or Ongoing Impacts to the Environment.	LTS	None required.	
Impact: 4.20-4: Exposure of People or Structures to Significant Risks, Including Downslope or Downstream Flooding or Landslides, as a Result of Runoff, Post-Fire Slope Instability, or Drainage Changes.	LTS	None required.	

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1—INTRODUCTION

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1—INTRODUCTION

This draft environmental impact report (Draft EIR) has been prepared by Fresno County (County), the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.; California Code of Regulations [CCR] Title 14 Section 15000 et seq. [CEQA Guidelines]), to evaluate the potentially significant environmental effects associated with RMC Pacific Materials, LLC's ("applicant" or "CEMEX") application to continue and expand mining operations for the Rockfield Quarry ("Rockfield Modification Project"), which is the proposed project. Under CEQA, the County must identify and consider the potentially significant environmental effects of the actions proposed before making a final decision to approve the proposed project. This Draft EIR will be used in the planning and decision-making process by the lead agency (the County) and any responsible or trustee agencies.

This introductory chapter provides a background and summary of the proposed project, an overview of the environmental review process required under CEQA, agency roles and responsibilities, and the organization used in this Draft EIR. A detailed description of the proposed project that is the subject of this Draft EIR can be found in Chapter 2, "Project Description."

1.1 PURPOSE OF AN ENVIRONMENTAL IMPACT REPORT

As stated in the CEQA Guidelines Section 15121(a):

> [a]n [environmental impact report (EIR)] is an informational document which will inform public agency decision-makers and the public generally of the significant effects, and describes reasonable alternatives to the project.

An EIR is not intended to recommend either approval or denial of a project. Rather, an EIR is a document whose primary purpose is to disclose all potential environmental impacts associated with an activity or "project."

The EIR process and the information it generates is used for purposes that include:

- informing governmental decision makers and the public about the potential, significant environmental effects of proposed activities;
- identifying ways that environmental damage can be avoided or significantly reduced; and
- preventing significant, avoidable damage to the environment by requiring changes to the project through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.

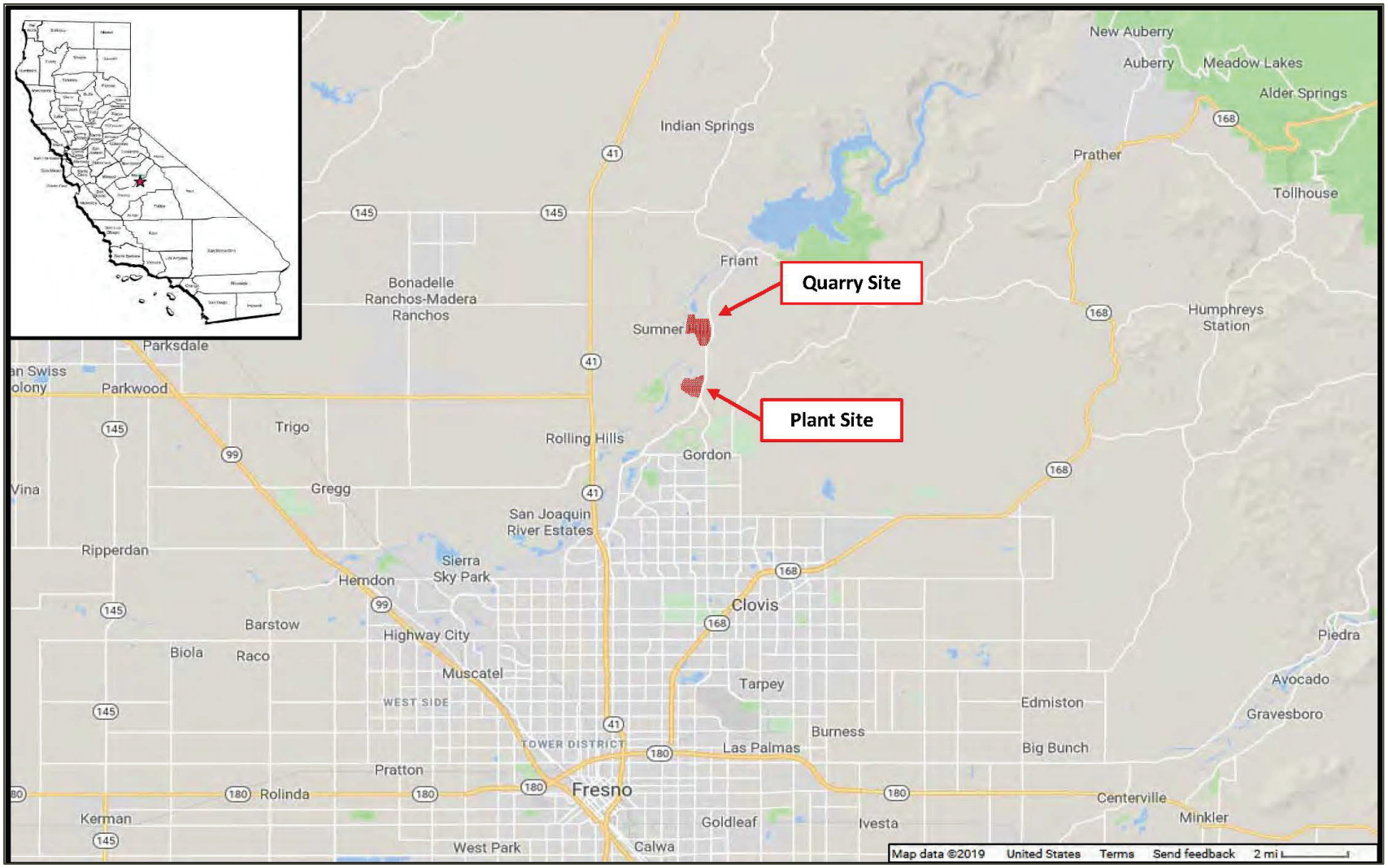
The purpose of a draft EIR is to provide an opportunity for agency representatives and the public to review and comment on the adequacy of the EIR before it is prepared as a final document and certified. This Draft EIR has been prepared by the County, acting in its capacity as lead agency, pursuant to CEQA and the CEQA Guidelines. The County has independently reviewed and analyzed this Draft EIR in accordance with PRC Section 21082.1(c)(1).

1.2 SUMMARY OF THE PROPOSED PROJECT

The applicant operates Rockfield Quarry, which is an approximately 490.9-acre total aggregate (rock, sand, and gravel) mining and processing operation within the unincorporated area of Fresno County, on two properties between North Friant Road and the San Joaquin River. The Plant Site is located on approximately 138.5 acres on the west side of North Friant Road, approximately 1.5 miles north of the City of Fresno and approximately 0.7 miles north of the intersection of North Willow Avenue and North Friant Road. The Quarry Site is located on approximately 352.4 acres on the west side of North Friant Road, approximately 1.1 miles north of the applicant's current Plant Site and approximately 2.0 miles south of the town of Friant (see Figure 1-1, "Regional Location," and Figure 1-2, "Site Location"). Operations at Rockfield Quarry are currently governed by and vested under Conditional Use Permits (CUPs) 367, 2032, 3063, 3064, 3093, and 3094, all of which will require amendments under the proposed project. In considering the application and the discretionary action of approving the project, the County is required to conduct environmental review pursuant to CEQA.

The applicant and its predecessors-in-interest have been continuously mining for rock, sand, and gravel at the Rockfield Quarry since at least 1913. Mining and processing operations have been located on the Plant Site since 1924. Together, mining and processing operations have been continuous at the two sites for 100+ years (1913-present). In addition to mining and reclamation, existing permitted and accessory uses at the Rockfield Quarry include aggregate, asphalt, and ready-mix concrete processing, as well as ancillary uses such as aggregate stockpiling, load-out, sales, and equipment storage and maintenance. Mining and processing operations at the Quarry Site and Plant Site are permitted through 2026.

The applicant proposes to continue and expand their existing mining and processing operations at the Plant Site and Quarry Site and reclaim the two sites when mining operations are complete through adoption of CUPs and a reclamation plan for the Rockfield Quarry ("proposed project"). The project requires amendments to the applicant's current land use entitlements (CUPs 367, 2032, 3063, and 3093).



SOURCE: Sespe Consulting, Inc., 2022; arranged by Benchmark Resources in 2022

Regional Location
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 1-1

BENCHMARK RESOURCES

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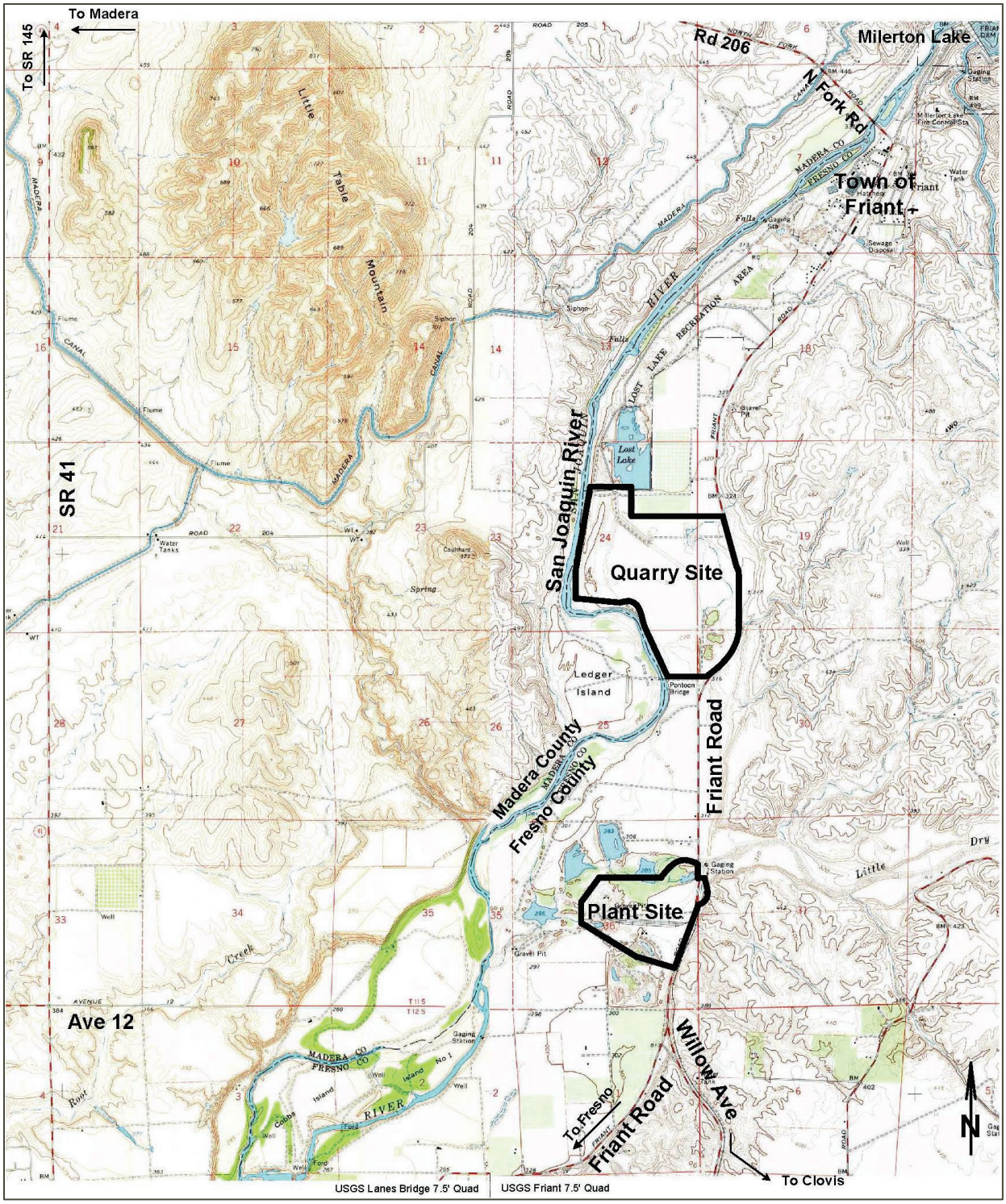

SOURCE: CEMEX, 2021; arranged by Benchmark Resources in 2022

Site Location
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 1-2

BENCHMARK RESOURCES

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In considering the application and the discretionary action of approving the project, the County is required to conduct environmental review pursuant to the California Environmental Quality Act (CEQA).

The Project includes the following two project life stages that are estimated to span 100 years:

- Stage 1:
  - Continue concurrent operations at both the Quarry Site and the Plant Site for up to 30 years.
  - Mine the remaining alluvial deposit at the Plant Site to a depth of approximately 85 feet below ground surface (bgs).
  - At the Plant Site, the existing aggregate processing plant would continue to be used to wash, screen, crush and sort aggregate mined on site.
  - At the Quarry Site, the hard rock deposit that lies beneath the alluvial deposit currently being mined, would be mined. Excavation of the hard rock would require drilling and blasting and would occur to a depth of approximately 600 feet bgs.
  - An aggregate processing plant would be added to the Quarry Site to wash, screen, crush, and sort the hard rock to be mined on site.
  - Aggregate products produced at the Quarry Site used at the asphalt and ready-mix plants at the Plant Site would be transported approximately 1.1 miles south to the Plant Site via North Friant Road in the same manner as the raw aggregate currently being transported from the Quarry Site to the Plant Site for the existing operations.
  - Other aggregate products produced at the Quarry site not used by the asphalt and ready-mix plants at the Plant Site would be sold directly from the quarry.
  - The former diesel asphalt plant at the Plant Site, which had been inactive since 2009 and has since been removed, would be replaced with a modern Hot Mix Asphalt (HMA) plant.
  - Periodic use of a portable crushing plant to recycle come-back concrete (unused concrete in mixer upon return to plant) would continue with the addition of the import of concrete debris to recycle into crushed miscellaneous base (CMB) and asphalt debris to be recycled asphalt product (RAP).
  - Relocation of the plant operations at the Plant Site to the Quarry Site in less than 30 years to recover the deposit beneath the plants.
  - Upon approval of project permits, the combined annual sales of aggregate from both sites are estimated to ramp up from the 1.4 MT allowed under the current

permits to 2.0 MT in approximately five years and up to 3.0 MT in approximately 10 years. This estimate is based on market conditions and can fluctuate depending on economic conditions and demand factors in the region, State, and country.

- When mining is completed at the Plant Site, reclamation would consist of approximately 138.5 acres of open space, riparian and open water wildlife habitat.

- Stage 2:
  - Continue hard rock mining and processing operations only at the Quarry Site for approximately 70 more years. The ready-mix concrete plant and the hot-mix asphalt plant would be relocated from the Plant Site to the Quarry Site.
  - The periodic use of a portable plant to recycle come-back concrete, imported concrete, and imported asphalt debris into CMB and RAP would be added to the Quarry Site.
  - All aggregate products produced at the Quarry Site would be used by the on-site asphalt and ready-mix plants or sold directly from the Quarry Site. The interplant haul would cease.
  - Stage 2 operations are estimated to have annual aggregate sales of 3.0 MT.
  - Reclamation of the Quarry Site would create approximately 352.4 acres of open space, riparian and open water wildlife habitat.

1.3 ENVIRONMENTAL REVIEW PROCESS

1.3.1 Scope of This Environmental Impact Report

The County circulated a notice of preparation (NOP) that indicated those topic areas that would require evaluation in the Draft EIR (see Appendix A-1, "Notice of Preparation"). The NOP was published on June 5, 2020, and the public comment period for commenting on the scope of the Draft EIR lasted through July 6, 2020. The NOP was sent to trustee agencies, interested organizations and individuals, and the State Clearinghouse. The notice of completion (NOC) of the NOP is included as Appendix A-2, "NOC of the Notice of Preparation,"

A virtual scoping meeting for public agencies was held on June 22, 2020, using the Zoom teleconference format, and a virtual public scoping session for the general public was held on June 24, 2020, using the Zoom webinar format. All comments received by the County through these scoping sessions, or otherwise received in writing or via e-mail on the NOP, were accounted for during preparation of the Draft EIR.

The following environmental topics are addressed in this Draft EIR:

- aesthetics,
- agricultural resources,
- air quality,
- biological resources,
- cultural resources,
- energy,
- geology and soils,
- greenhouse gas emissions,
- hazards and hazardous materials,
- hydrology and water quality,
- land use and planning,
- mineral resources,
- noise,
- population and housing,
- public services,
- recreation,
- transportation,
- tribal cultural resources,
- utilities and service systems, and
- wildfire.

No initial study review was conducted for the project because the County determined that no issues were to be eliminated from further consideration in the Draft EIR.

1.3.2 Areas of Controversy

CEQA Guidelines Section 15123(b)(2) requires discussion of areas of controversy known to the lead agency, including issues raised by agencies and the public. While many of the issues raised during the scoping process may be considered by the public to be generally controversial, the issues listed below are those considered by the County to represent the areas of controversy for the proposed project as related specifically to the environmental review under CEQA. Each of these issues is addressed in this Draft EIR.

- Proposed drilling and blasting.
- Proposed expansion of the mining area and increased depth of mining adjacent to the San Joaquin River corridor.
- Proposed continuation of mining for an additional 30 years at the Plant Site and 100 years at the Quarry Site.
- Proposed replacement and relocation of aggregate processing plant, ready-mix concrete plant, and asphalt plant to the Quarry Site.
- Expansion of onsite sales to the Quarry Site.
- Proposed importation of materials for recycling.
- Proposed resumption of asphalt production and sales at the Plant Site.
- Potential land use conflicts associated with aesthetics, air quality, biological resource habitat reductions and reduced movement corridors, noise and vibration, and other potential adverse circumstances associated with continued and

expanded operation of the quarry and adjacent recreational and residential land uses.

1.3.3 Public Review

This Draft EIR is available for public review and comment during the 45-day period identified on the Notice of Availability/Notice of Completion of a Draft EIR (NOA/NOC) accompanying this document.

This Draft EIR and all supporting technical documents and reference documents are available for public review at:

County of Fresno, Department of Public Works and Planning
Development Services and Capital Projects Division, Current Planning Section
2220 Tulare Road, Plaza Level Suite B
Fresno, California 93721

Woodward Park Regional Library, Reference Desk
944 E Perrin Ave, Fresno, CA 93720
Fresno, California 93720

Fresno County Main Library, Reference Desk
2420 Mariposa Street
Fresno, CA 93721

County Website: https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/development-services-division/planning-and-land-use/environmental-impact-reports/cemex-rockfield-expansion

During the 45-day public comment period, written comments on the Draft EIR may be submitted to:

Mr. David Randall
County of Fresno, Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Road, Sixth Floor
Fresno, California 93721
Phone: 559-600-4052
Email: drandall@fresnocounty.gov

Please reference "EIR 7763" in your correspondence and include your name, address, and phone number and/or email address so that we may contact you for clarification, if necessary.

Following the public review and comment period, responses to all written and oral comments received on the environmental analysis in this Draft EIR will be responded to. The responses and any other revisions to the Draft EIR will be prepared as a response-to-comments document. The Draft EIR and its appendices, together with the response-to-comments document, will constitute the Final EIR for the proposed project.

1.3.4 Use of the EIR

Pursuant to CEQA, this is a public information document for use by governmental agencies and the general public. The information contained in this Draft EIR is subject to review and consideration by the County as lead agency and any responsible agencies prior to the County's decision to approve, reject, or modify the proposed project.

The County of Fresno Planning Commission must ultimately certify that it has reviewed and considered the information in the EIR and that the EIR has been completed in conformity with the requirements of CEQA before making any decision on the proposed project.

Certification of the EIR does not constitute approval of the project.

1.4 DISCRETIONARY ACTIONS

It is anticipated that this Draft EIR will provide environmental review for all discretionary approvals and actions necessary for this project. A number of permits and approvals would be required before the changes in operation at the project sites could proceed, although quarrying operations pursuant to the currently effective land use permits are anticipated to continue throughout the environmental review process period.

As lead agency for the proposed project, the County is primarily responsible for the approvals required. The primary approvals being sought are adoption of a Surface Mining and Reclamation Plan (SMRP) and approval of two Conditional Use Permits (CUPs). As part of any approval action for the project, the County would be required to certify the Final EIR, adopt findings of fact and overriding considerations (if necessary), and adopt a mitigation monitoring plan. In Fresno County, the County Planning Commission is the approval authority for the land use permits and reclamation plan, which action is appealable to the County Board of Supervisors.

1.5 RESPONSIBLE AND TRUSTEE AGENCIES

Projects or actions undertaken by the lead agency (in this case the County) may require subsequent oversight, approvals, or permits from other public agencies in order to be implemented. Other such agencies are referred to as "responsible agencies" and "trustee agencies." Pursuant to Sections 15381 and 15386 of the CEQA Guidelines, as amended, responsible agencies and trustee agencies are defined as follows:

- A "responsible agency" is a public agency that proposes to carry out or approve a project, for which a lead agency is preparing or has prepared an EIR or negative declaration. For the purposes of CEQA, the term "responsible agency" includes all public agencies other than the lead agency that have discretionary approval power over the project (Section 15381).
- A "trustee agency" is a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California (Section 15386).

A number of public, private, and political agencies and jurisdictions may have a particular interest in the project. These agencies include those listed below:

Federal Agencies

- U.S. Fish and Wildlife Service (incidental take statement)

State Agencies

- California Department of Conservation, Division of Mine Reclamation (review of revised reclamation plan and Financial Assurance Cost Estimate [FACE)
- California Department of Fish and Wildlife (lake or streambed alteration agreement; California Endangered Species Act permit)

Regional and Local Agencies

- Central Valley Regional Water Quality Control Board (Section 401 Certification)
- San Joaquin Valley Air Pollution Control District (SJVAPCD) (authority to construct and permits to operate plants and equipment)

1.6 REPORT ORGANIZATION

This Draft EIR is organized into the following chapters and sections:

Executive Summary

This chapter provides a summary of the project and a summary of the significant environmental impacts that would result from implementation of the proposed project and describes Conditions of Approval and mitigation measures recommended to avoid or reduce significant impacts.

Chapter 1, "Introduction"

This chapter discusses the overall Draft EIR purpose, provides a summary of the proposed project, describes the Draft EIR scope, and summarizes the organization of the Draft EIR.

Chapter 2, "Project Description"

This chapter provides a description of the project's objectives, the project sites and context, and a detailed description of the proposed project and its required local (County) approval process.

Chapter 3, "Terminology, Approach, and Assumptions"

This chapter describes the key terminology, approach, and assumptions used in the Draft EIR analysis, including definitions of existing conditions versus baseline conditions, descriptions of the increment of net new changes at the site attributable to the project, and assumptions regarding other cumulative development and methodologies used to define cumulative scenarios.

Chapter 4, "Environmental Analysis"

This chapter provides the environmental setting, impacts, and required mitigation measures for the project organized by issue area corresponding to topics in the CEQA Environmental Checklist (CEQA Guidelines Appendix G, as amended). Sections 4.1 through 4.20 address the environmental topics of this Draft EIR: aesthetics and visual resources, agricultural resources, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities, and wildfire.

Chapter 5, "Cumulative Impacts"

This section provides an evaluation of the cumulative impacts, which is based on the past, present, and probable future conditions, together with the effects of the project.

Chapter 6, "Alternatives"

This section provides a comparative evaluation of alternatives to the proposed project. The alternatives include:

- No Project
- Reduced Mining Depth (400 Feet),
- Reduced Mining Depth (300 Feet),
- Reduced Mining Depth (300 Feet) with Additional Setbacks, and
- Reduced Mining Depth (400 Feet) with Reduced Annual Sales.

Chapter 7, "Other CEQA Topics"

This section provides the required analysis of growth-inducing impacts, significant irreversible changes, effects found not to be significant, and significant unavoidable impacts.

Chapter 8, "List of Preparers"

This section identifies the preparers of the Draft EIR, and the persons and organizations contacted.

Chapter 9, "References and Resources"

This section identifies the references and resources cited within the text of this Draft EIR.

Chapter 10, "Acronyms"

This section provides an alphabetical list of the acronyms and initialisms used throughout the Draft EIR.

Appendices

The appendices contain the NOP, written comments submitted on the NOP, and technical studies and reports used to prepare the Draft EIR.

2—PROJECT DESCRIPTION

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2—PROJECT DESCRIPTION

2.1 INTRODUCTION

CEMEX Construction Materials Pacific, LLC. ("CEMEX" or "applicant") is proposing the Rockfield Modification Project ("proposed project" or "project") to expand its existing rock, sand, and gravel mining and processing operation at Rockfield Quarry (the quarry), and to reclaim the quarry when mining operations are complete. The implementation of the proposed project would require adoption of a Surface Mining and Reclamation Plan (SMRP) for the Rockfield Quarry (included as Appendix B-1, "Surface Mining and Reclamation Plan"). The proposed project would also require County of Fresno (County) approval of two Conditional Use Permits (CUPs) (CUP Application Nos. 3666 and 3667) that would amend the applicant's current land use entitlements.

The Rockfield Quarry is located on two properties between North Friant Road and the San Joaquin River in an unincorporated area of Fresno County (see Figure 1-1, "Regional Location" and Figure 1-2, "Site Location," located in Chapter 1, "Introduction," of this Draft EIR). One property contains aggregate processing facilities and is referred in this Draft Environmental Impact Report (EIR) as the "Plant Site." The second property is the location of the aggregate mining and is referred to in this Draft EIR as the "Quarry Site." Collectively, these properties are referred to as the "project sites."

CEMEX and its predecessors-in-interest have been continuously mining for rock, sand, and gravel at the Quarry Site since at least 1913. Mining and processing operations have been located on the Plant Site since 1924. Together, mining and processing operations at the Rockfield Quarry have been continuous at the two sites for more than 100 years (1913-present). Mining and processing operations at the Quarry Site and Plant Site are permitted through July of 2026[1].

The Plant Site currently operates under CUPs 367, 2209, 3063, and 3093. The CUPs allow aggregate mining of the alluvial deposit; plant operations including an aggregate processing plant, a ready-mix concrete plant, a hot-mix asphalt plant (inactive since 2009), and related supportive facilities; and the processing of raw aggregate mined from both the applicant's current Quarry Site and Plant Site. A portable plant is brought in periodically to recycle come-back concrete or return concrete (unused concrete in mixer truck upon return to Plant) into crushed miscellaneous base (CMB).

[1] The facility's operating permits were set to expire in 2023, but the County approved a three-year extension.

The Quarry Site currently operates under CUPs 367, 2032, 3063, and 3093. Since there are no plant operations permitted at the Quarry Site, the CUPs allow the interplant haul of approximately 1.4 million tons per year (MT/year) of raw aggregate via North Friant Road approximately 1.1 miles south to the Plant Site for processing.

The project description presented herein is based on the SMRP (Appendix B-1), Project Description/Operational Statement (Appendix B-2, "Project Description/Operational Statement"), and associated technical studies, submitted by the applicant as part of the project application to the Fresno County Department of Public Works and Planning, Development Services and Capital Projects Division in October 2021.

2.2 PROJECT OVERVIEW

The applicant proposes to continue and expand their existing mining and processing operations within the existing footprints of the project sites, and to reclaim the project sites when mining operations are complete.

2.2.1 Project Location

The Rockfield Quarry is located on two properties: the Plant Site and the Quarry Site. Both properties are located north of the City of Fresno, between North Friant Road to the east and the San Joaquin River to the west, in an unincorporated area of Fresno County (see Figure 1-1 and Figure 1-2). The Plant Site address is 13475 North Friant Road, and the Quarry Site address is 14765 North Friant Road.

The two properties are the Plant Site and the Quarry Site, as described below:

- **Plant Site:** The Plant Site is located on approximately 138.5 acres adjacent to North Friant Road, approximately 1.5 miles north of the City of Fresno, and approximately 0.5 miles east of the San Joaquin River. The 138.5-acre Plant Site area includes approximately 126.6 acres owned by the applicant (APNs 300-070-56S, 57S, 58S, 59S, and 60S) and 12.9 acres owned by the California Department of Fish and Wildlife (CDFW) (portions of APNs 300-070-43ST, 48ST, and 50ST).

  CDFW acquired the south half of the Ball Ranch in 2000, which included the approximately 12.9-acre area that was part of the mining and processing operations associated with the Plant Site. In March 2019, the applicant acquired the 126.6-acres of the Plant Site that was under lease from Ball Ranch, and the applicant wishes to continue operations on those portions of the CDFW property that are still utilized by the applicant for its current operations. In the event CDFW does not permit the 12.9 acres currently owned by CDFW to continue to be used by the applicant, such properties would not be used for mining and stockpiling

operations. This Draft EIR assumes that CDFW will permit CDFW to continue to be used for mining and processing operations under the proposed project. Therefore, this 12.9-acre area is included in the 138.5-acre Plant Site.

- **Quarry Site:** The Quarry Site is located on approximately 352.4 acres adjacent to North Friant Road, approximately 1.1 miles north of the applicant's current Plant Site and approximately 1.5 miles south of the town of Friant. The Quarry Site properties (APNs 300-040-19 and 20, 300-080-01S, 300-250-12 and a portion of 300-310-01) are owned by RMC Pacific Materials, LLC, a wholly owned subsidiary of CEMEX.

2.2.2 Project Stages

The proposed project would occur in two stages as described below. The total project life of the combined Stages 1 and 2 is estimated to be up to 100 years.

Stage 1 would continue concurrent operations at both the Quarry Site and the Plant Site for up to 30 years.

- Plant Site:
  - Remaining alluvial deposits on approximately 117.6 acres of the 138.5-acre Plant Site would be mined to a depth of approximately 85 feet below ground surface (bgs) (i.e. original ground surface before historical mining).
  - The existing aggregate processing plant would continue to be used to wash, screen, crush, and sort aggregate to be mined from the Plant Site.
  - The existing ready-mix concrete plant would continue to operate.
  - A modern asphalt plant would be developed on the site to replace the outdated asphalt plant that was active until about 2009 and was subsequently removed.
  - Aggregate products from the Plant Site and ready-mix concrete plant would continue to be sold to customers, and asphalt sales would resume.
  - Periodic use of a diesel-powered, portable crushing plant to recycle come-back concrete (unused concrete in mixer upon return to plant) would continue with the addition of the import of concrete debris to recycle into crushed miscellaneous base and import of asphalt debris to be recycled asphalt product.
  - Upon completion of mining at the Plant Site, all operations at the Plant Site including processing material from the Quarry Site, concrete and asphalt mixing, and crushing operations would cease. In addition, all equipment would be removed and the site would be reclaimed as 138.5 acres of open space, riparian, and open water wildlife habitat.

- Quarry Site:
  - Mining would be modified to include the hard rock (granite) that lies beneath the alluvial deposit currently being mined.
  - Alluvial deposits and hard rock on approximately 281.9 acres of the 352.4-acre Quarry Site would be mined to a depth of approximately 600 feet bgs.
  - Mining of the hard rock would require drilling and blasting.
  - An aggregate processing plant would be added to the Quarry Site to wash, screen, crush, and sort the aggregate. An electric-powered, portable aggregate processing plant may be used initially.
  - Those aggregate products produced at the Quarry Site aggregate plant for the asphalt and ready-mix plants would be transported approximately 1.1 miles south to the Plant Site via an interplant haul on North Friant Road, following the same manner as current raw aggregate transportation from the Quarry Site to the Plant Site for the existing operations.
  - Other aggregate products produced at the Quarry Site and not used by the asphalt and ready-mix plants at the Plant Site, (e.g., road base, various-sized crushed rock, sand, etc.) would be sold directly from the Quarry Site.

Upon approval of the project, the combined annual sales of aggregate from both sites are estimated to increase from the 1.4 MT/year allowed under the current permits to 2.0 MT/year within approximately five years of project approval and up to 3.0 MT/year within approximately 10 years of project approval.

Stage 2 would continue hard rock mining and processing operations only at the Quarry Site for approximately 70 additional years.

- A ready-mix concrete plant and a hot-mix asphalt plant would be developed on the Quarry Site, to replace the plants removed from the Plant Site. The interplant haul would cease during this stage.
- The periodic use of a diesel-powered, portable plant to recycle come-back concrete, imported concrete, and imported asphalt debris into crushed miscellaneous base (CMB) and recycled asphalt product (RAP) would be added to the Quarry Site, to relocate the recycle operations from the Plant Site.
- Upon completion of mining at the Quarry Site, operations at the Quarry Site would cease and all equipment would be removed. The Quarry Site would then be reclaimed to create approximately 352.4 acres of open space, riparian, and open water wildlife habitat.

Stage 2 operations are estimated to have annual aggregate sales of 3.0 MT/year.

2.2.3 Summary of Project Characteristics

Table 2-1, "Rockfield Modification Project Characteristics," provides a summary of the project features.

Table 2-1
Rockfield Modification Project Characteristics

Item/Activity	Description[1]		
Existing Permits, Acres	Plant Site: CUPs 367, 2209, 3063, and 3093. Approximately 138.5 acres. Quarry Site: CUPs 367, 2032, 3063, and 3093. Approximately 352.4 acres. Total Both Sites: Approximately 490.9 acres		
Proposed Mining Acres	Plant Site: Approximately 117.6 acres Quarry Site: Approximately 281.9 acres Total Both Sites: Approximately 399.5 acres		
Mining Depth Allowed Under Existing CUPs	Plant Site: no maximum depth specified Quarry Site: no maximum depth specified		
Proposed Mining Depth	Plant Site: Approximately 85 feet bgs Quarry Site: Approximately 600 feet bgs		
Interplant Haul Via North Friant Road	Existing = 1.4 MT/year Stage 1 = 0.7 MT/year Stage 2 = None		
Estimated Aggregate Reserves Volume	Plant Site: 12 MT Quarry Site: 215 MT		
Estimated Total Sales	195 MT		
Estimated Maximum Annual Processed Aggregate Volume (including waste/fines)	3.3 MT		
Estimated Maximum Annual Aggregate Sales Volume[2] (excluding waste/fines)	Existing = 1.4 MT Stage 1 (first 5 to 10 years) = 2.0 MT Stage 1 and 2 (after 10 years) = 3.0 MT		
Estimated Annual Sales at Total 3.0 MT[3]	**Existing**	**Stage 1—Combined from both Sites**	**Stage 2—Quarry Site Only**
Aggregate[2]	1,400,000 Tons	3,000,000 Tons	3,000,000 Tons
Hot-Mix Asphalt	0 Tons (Historically 230,800 Tons)	500,000 Tons	500,000 Tons
Ready-Mix Concrete	189,500 Cubic Yards	300,000 Cubic Yards	300,000 Cubic Yards
Concrete and Asphalt Recycling	25,000 Tons (concrete only)	200,000 Tons	200,000 Tons
Depth to Groundwater	Plant Site: 10-30 feet bgs (current surface) Quarry Site: 15-40 feet bgs (current surface)		
Reclamation End Uses: Open Space, Riparian and Open Water Habitat[4]	Plant Site: Approximately 138.5 acres Quarry Site: Approximately 352.4 acres		

Item/Activity	Description[1]
Project Life	Plant Site: Up to 30 Years Quarry Site: Up to 100 Years

Table Source: CEMEX 2021.
Table Notes:
feet bgs = feet below ground surface (i.e. original ground surface before historical mining); MT = million tons; MT/year = million tons per year

1. All values are approximate.
2. Includes sales to on-site hot-mix asphalt plant and ready-mix concrete plant.
3. Typical mix of products. Actual sales mix will vary based on demand.
4. Actual final reclamation and areal extent at each site will depend on the volume and availability of overburden and process fines suitable for use as fill occurring on site.

2.3 PROJECT PURPOSE AND OBJECTIVES

The project purpose is to continue and expand existing mining and processing operations at the Plant Site and Quarry Site and reclaim the two sites when mining operations are complete.

The objectives for the proposed project are to:

1) continue to provide a reliable and sustainable, local source of high-quality aggregate to help meet the current and long-term demand (100 years) for construction materials in the Fresno region;
2) continue to utilize known aggregate reserves from existing partially mined properties, including those designated by the state and county as Mineral Resource Zone 2 (MRZ-2) (Mineral Resource Zone areas where adequate information indicates that significant mineral resources are present, i.e., sand and gravel);
3) continue to utilize high quality aggregate resources that meet the California Department of Transportation's specifications for use in Portland Cement Concrete (PCC) and Asphaltic Concrete (AC) which aggregate is important for quality infrastructure growth and maintenance because of its versatility, value, and relative scarcity;
4) maintain a local source of construction aggregate with enough annual sales capacity (3.0 MT) to encourage a healthy competitive market;
5) continue to provide aggregate resources with access to an efficient local road network;
6) continue to provide an environmentally sound project that would balance the recovery of the aggregate resource with the protection of other resources including wildlife habitat, groundwater, surface water, and air quality;

7) continue local quality jobs, while also benefiting local downstream businesses and creating an enhanced tax revenue to the county;
8) maintain consistency with the San Joaquin River Parkway Master Plan;
9) reclaim both sites to wildlife habitat in a manner similar to the reclaimed mine sites that make up the majority of the San Joaquin River Parkway Properties; and
10) provide potential Parkway trail easements.

2.4 EXISTING CONDITIONS

2.4.1 Project Location and Access

The Rockfield Quarry is located on two properties: the Plant Site and the Quarry Site. Both properties are located north of the City of Fresno, between North Friant Road to the east and the San Joaquin River to the west, in an unincorporated area of Fresno County (shown on Figures 1-1 and 1-2). Both the Plant Site and Quarry Site are accessed from North Friant Road, which is a four-lane divided road with a speed limit of 65 mile per hour (mph) in the vicinity of the project sites. There are existing southbound acceleration lanes and northbound left-hand turn pockets to handle truck traffic at both the Plant Site and Quarry Site access roads. A northbound acceleration lane is also present at the Plant Site for truck use.

The ***Plant Site*** is located on approximately 138.5 acres adjacent to North Friant Road, approximately 1.5 miles north of the City of Fresno, and approximately 0.5 miles east of the San Joaquin River. The 138.5-acre Plant Site area includes approximately 126.6 acres owned by the applicant (APNs 300-070-56S, 57S, 58S, 59S, and 60S) and 12.9 acres owned by the California Department of Fish and Wildlife (CDFW) (portions of APNs 300-070-43ST, 48ST, and 50ST). A detailed Plant Site aerial map with parcel delineations is shown on Figure 2-1, "Plant Site Aerial." The Plant Site is accessible from one existing driveway entrance on the west side of North Friant Road. The first 100 feet of the access road is paved and has a width of at least 24 feet.

The ***Quarry Site*** is located on approximately 352.4 acres adjacent to North Friant Road (APNs 300-040-19 and 20, 300-080-01S, 300-250-12 and a portion of 300-310-01), approximately 1.1 miles north of the applicant's current Plant Site and approximately 1.5 miles south of the Town of Friant. A detailed Quarry Site aerial map with parcel delineations is shown on Figure 2-2, "Quarry Site Aerial." The Quarry Site is accessible from one existing driveway entrance on the west side of North Friant Road. The first 100 feet of the access road is paved and has a width of at least 24 feet.

2.4.2 Project Sites Land Uses

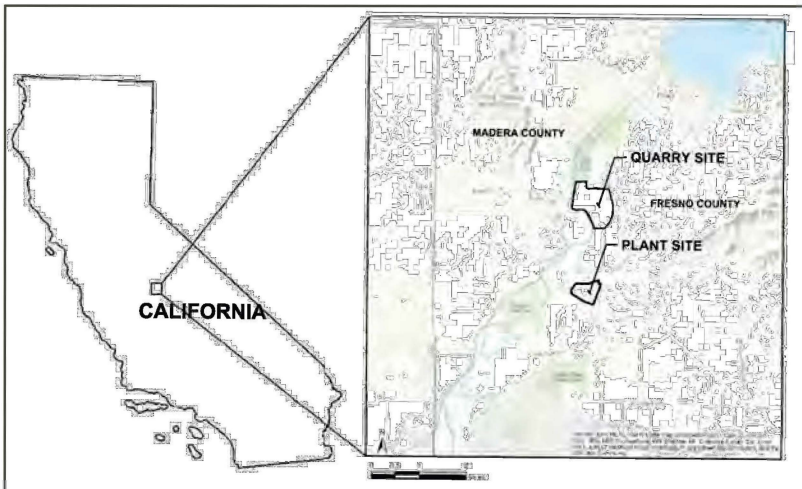
2.4.2.1 Plant Site Existing Conditions

The existing land uses on the Plant Site consist of aggregate mining and production facilities, as shown on Figure 2-3, "Plant Site Existing Conditions." There is currently no aggregate mining on the Plant Site. The Plant Site is relatively flat and slopes gently to the west; surface elevations range from 300 to 320 feet above mean sea level (msl). The entire 138.5-acre Plant Site is disturbed by mining and processing operations with the exception of an approximately 4-acre landscaped screen area within the required 50-foot setback from North Friant Road. The Plant Site contains the Rockfield Quarry aggregate processing plant that has been in operation since 1924. Approximately 96 acres of the Plant Site have been partially mined to depths of between 5 to 32 feet bgs and backfilled over which there is a 1.25-acre river water delivery ditch that provides water for washing aggregate and a 2.43-acre wash water conveyance ditch that conveys used wash water to the settling ponds. Approximately 38 acres have been developed as silt ponds that settle out silts from the wash water used by the aggregate plant and that allows water to be recycled back to the aggregate plant as wash water. Various large stockpiles and perimeter berms are also found throughout the site. The habitat assessment performed for the Plant Site indicates that 0.72 acre of land supports a recognized plant community—riparian forest (ELMT Consulting May 2022); however, this riparian forest community would not be disturbed by the proposed project.

Facilities and Supporting Equipment

The Plant Site currently contains the following processing and production facilities:

- **Aggregate Plant:** Located at the center of the site. Supporting equipment includes front-end loaders; water truck; conveyors; screens; screening towers; crushers, washers; sand cyclones; sand screws; sand/aggregate truck loadout bins; pollution control equipment; dewatering equipment and tanks; recycle water pumps; computer control tower; a maintenance shop; quality control lab; fuel tanks; and other accessory equipment and buildings.
- **Ready-mix Concrete Plant:** Located at the northwest portion of the site. Supporting equipment includes front-end loaders; concrete mixer trucks; ground aggregate storage bins; conveyors; batch plant; cement silos; pollution control equipment; storage buildings; mixer truck maintenance shop; batch office; and other accessory equipment.

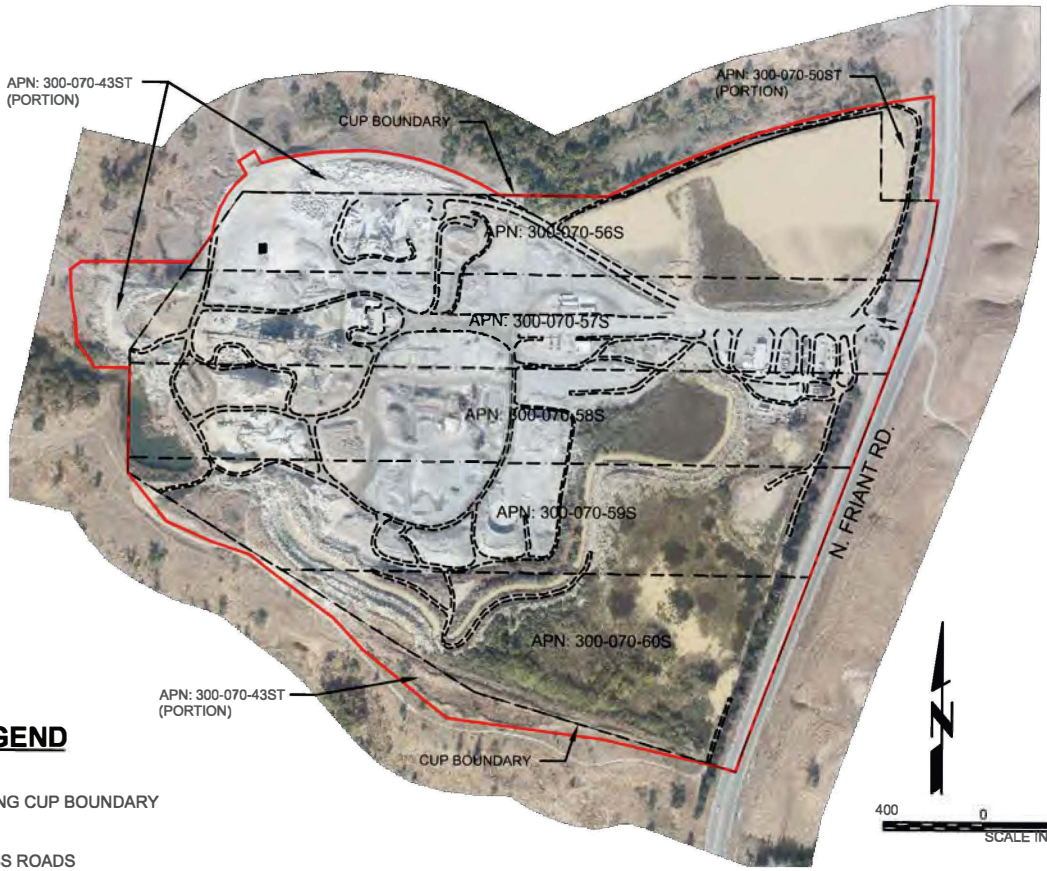


VICINITY MAP

PLANT SITE INFORMATION

PLANT SITE ADDRESS: 13475 NORTH FRIANT ROAD
FRESNO, CALIFORNIA 93736

CEMEX EXISTING PROPERTY BOUNDARY: 125.6 ACRES
PROJECT OPERATIONS BOUNDARY: 138.5 ACRES



PLANT SITE LEGEND

- EXISTING CUP BOUNDARY
- ACCESS ROADS
- INGRESS/EGRESS
- CEMEX PROPERTY BOUNDARY

PLANT SITE AERIAL MAP

AERIAL PHOTOGRAPHY BY: AEROTECH MAPPING, INC.
NOVEMBER 11, 2018

PARCEL BOUNDARY BY: FRESNO COUNTY PUBLIC WORKS AND PLANNING DEPARTMENT GIS PORTAL

SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Plant Site Aerial
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 2-1

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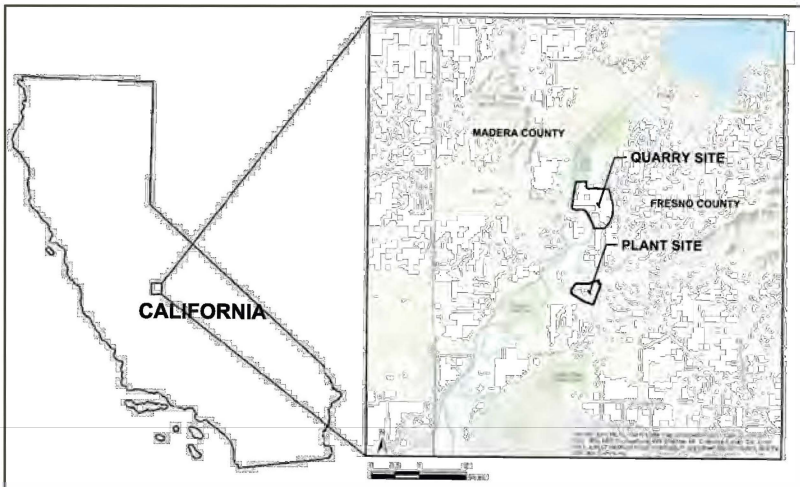
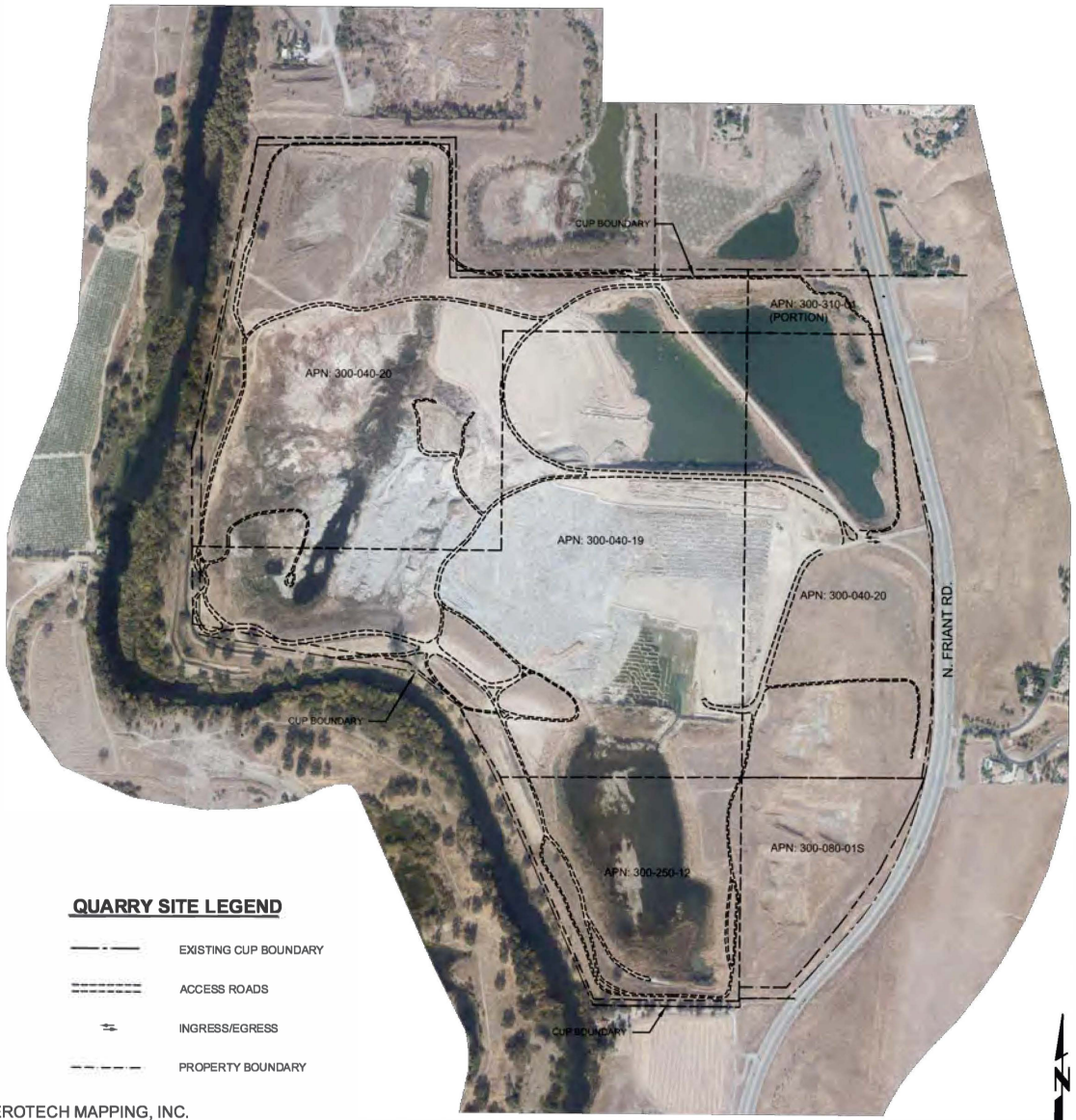


QUARRY SITE INFORMATION

QUARRY SITE ADDRESS: 14765 NORTH FRIANT ROAD
FRESNO, CALIFORNIA 93736

PROJECT BOUNDARY: 352.4 ACRES

VICINITY MAP



QUARRY SITE LEGEND

- EXISTING CUP BOUNDARY
- ACCESS ROADS
- INGRESS/EGRESS
- PROPERTY BOUNDARY

AERIAL PHOTOGRAPHY BY: AEROTECH MAPPING, INC.
NOVEMBER 11, 2018

PARCEL BOUNDARY BY: FRESNO COUNTY PUBLIC WORKS AND PLANNING DEPARTMENT GIS PORTAL

QUARRY SITE AERIAL MAP

400 0 400 800
SCALE IN FEET

SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Quarry Site Aerial
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 2-2

BENCHMARK RESOURCES

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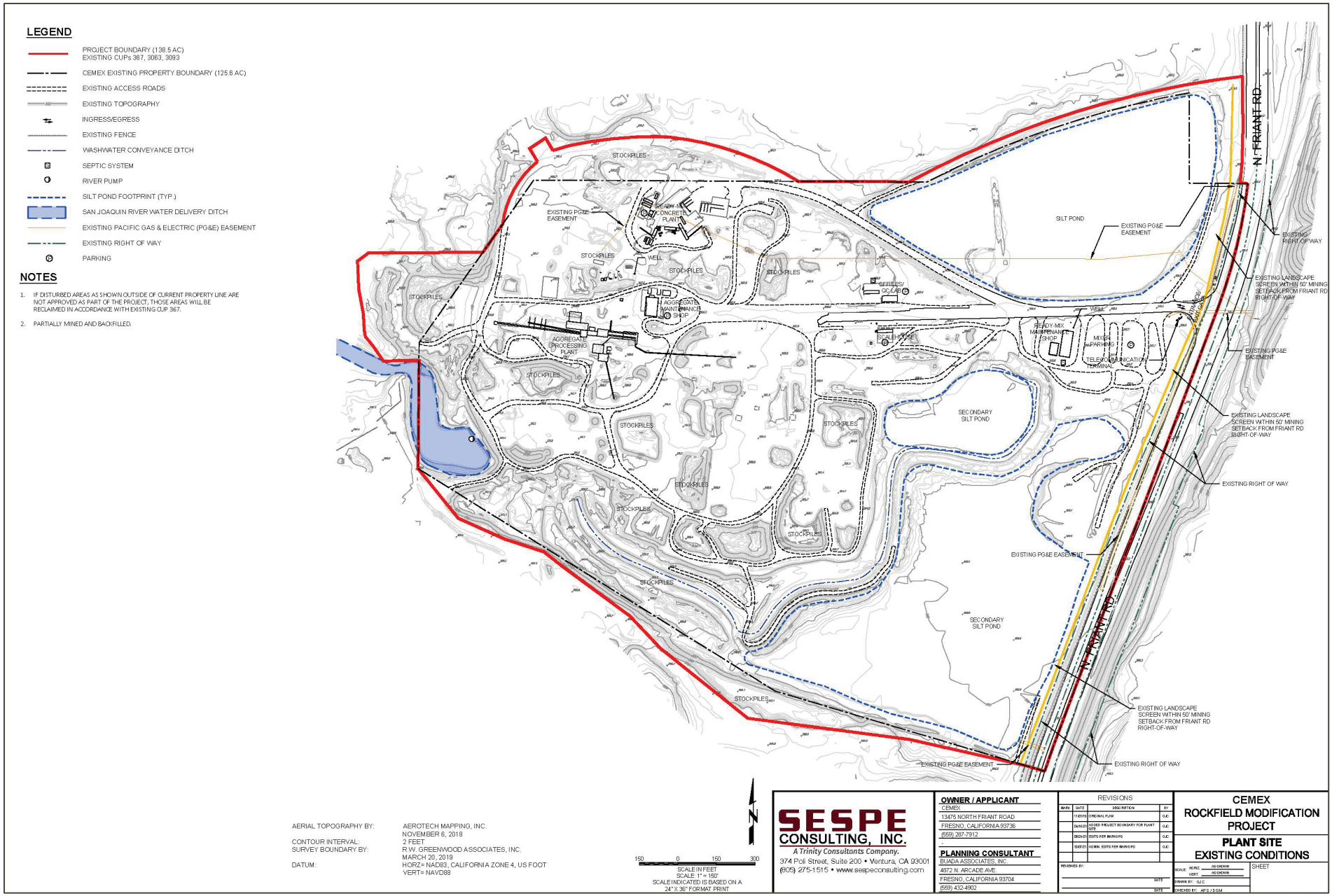

SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Plant Site Existing Conditions
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 2-3

BENCHMARK RESOURCES

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- **Diesel-powered, Portable Recycle Plant:** Locations vary across the site. Supporting equipment includes front-loaders, crushers, screens, and conveyors.
- **Diesel-powered Asphalt Plant (removed):** An asphalt plant was located at southern portion of the site. It was active until about 2009 and has since been removed.

The Plant Site also contains a ready-mix maintenance shop/office (near the site entrance), a scale house/office/quality control lab (near center of site), and an aggregate maintenance shop (center of the site).

Production and Sales

Aggregate products produced by the existing aggregate processing plant are stockpiled and sold to the on-site ready-mix concrete plant or sold to outside customers from the Plant Site. Ready-mix concrete produced on-site is also sold to customers from the Plant Site. A diesel-powered, portable plant is brought in periodically to recycle comeback concrete into crushed miscellaneous base which is then sold.

Hours of Operation

The permitted hours of operation are shown on Table 2-2, "Plant Site Existing Permitted Hours of Operation."

Table 2-2
Plant Site Existing Permitted Hours of Operation

Activity	Typical Hours and Days
Excavation	6 a.m. to 6 p.m., Monday through Friday
Asphalt Batch Plant	6 a.m. to 6 p.m., Monday through Friday
Concrete Batch Plant	4 a.m. to 6 p.m., Monday through Friday (May through October) 5:30 a.m. to 6 p.m., Monday through Friday (November through April) 6 a.m. to 1 p.m., Saturday (All year)
In the event of any emergency as determined by a governmental body or agency, excavation and processing may proceed as needed notwithstanding the aforesaid.	

Table Source: CEMEX 2022.

Setbacks

The following setbacks are required under the existing CUPs for the Plant Site:

1) 50-feet from the public right-of-way;
2) 25-feet from other property lines; and

3) No stockpiled soil or material placed closer than 25 feet from any property boundary except visual/sound berms.

Screening, Parking, Lighting, and Fencing

A landscaped screen exists along the North Friant Road frontage. The perimeter of the property along North Friant Road is fenced with four-foot high, barbed wire ranch fencing with a chain link entrance gate. Existing nighttime lighting is used to provide a safe working environment. On-site parking exists for employees, customers, service/delivery vehicles and concrete mixers (see Figure 2-3).

Utilities and Solid Waste Management

A PG&E easement is located along the eastern edge of the Plant Site, adjacent to North Friant Road. A PG&E easement also crosses the northern portion of the Plant Site from east to west. These rights-of-way are shown on Figure 2-3. Electricity is provided by connections to PG&E power lines along North Friant Road. Drinking water is provided as bottled water. Two septic systems, one located at the office QC Lab and one located at the ready-mix maintenance shop, treat the sewage generated on the Plant Site. The septic system is serviced as necessary by commercial septic services. Solid waste (i.e., parts packaging, paper, etc.) is deposited in dumpsters for pickup and disposal by Ponderosa Solid Waste, a licensed solid waste disposal company.

The Ponderosa Telephone telecommunications terminal is located on the southwest corner of the entrance road and is connected to the office, scale house, ready-mix concrete plant and the ready-mix maintenance shop. There are no natural gas connections at the Plant Site.

Water Usage

There are two groundwater production wells on the Plant Site. One well is located near the entrance of the site, and the second is located in the northwest portion of the site (locations shown on Figure 2-3). In addition, four groundwater monitoring wells have been installed on the perimeter of the property. Groundwater levels from 2018 to 2019 ranged from 21 to 34 feet bgs. Approximately 35 acre-feet/year of groundwater from on-site wells is consumed by the ready-mix concrete operations with a small amount of groundwater (approximately 1 acre-feet/year) also used for domestic purposes (e.g., toilets, handwashing, etc.).

The San Joaquin River is located approximately 0.5 miles to the west of the Plant Site. The applicant has water rights to use river water for industrial purposes in connection with the processing of rock, sand, and gravel. Water is diverted from the river to the Plant Site via a ditch and the water then is used to wash the aggregate. After processing and

cleaning the aggregate, water with fines washed from the aggregate is sent to the silt ponds where the silts and fines are settled out. Water from the silt ponds is then recycled back to the plant as process water and water from the river water is added as necessary. The water trucks also use water recycled from the silt ponds to control dust on the haul roads at the Plant Site. In addition, the silt ponds serve as a source of recharge to the local groundwater aquifer. Currently, approximately 295 acre-feet per year (acre-feet/year) of river water is consumed for aggregate processing.

2.4.2.2 Quarry Site Existing Conditions

The existing land uses on the Quarry Site consist of aggregate mining as shown on Figure 2-4, "Quarry Site Existing Conditions." The 352.4-acre Quarry Site generally slopes to the south. Surface elevations range from approximately 250 to 330 feet msl. The majority of the Quarry Site (over 90 percent) has been partially disturbed by the current and historical mining operations. Undisturbed areas include the required 50-foot setback from North Friant Road and the required 200-foot setback from the San Joaquin River. Screening berms are located along North Friant Road and along the southwest boundary. Vegetated topsoil stockpiles located in various locations along the western perimeter provide additional screening from the river channel below. Various internal haul roads run throughout the Quarry Site.

The habitat assessment performed for the Quarry Site stated that the only plant community observed within the boundaries of the Quarry Site were scattered patches of non-native annual grasslands, totaling approximately 48 acres (ELMT Consulting May 2022). This habitat occurs along the eastern boundary of the Quarry Site, near North Friant Road. Under the current CUPs these non-native grassland areas located outside of the 50-foot setback from North Friant Road are in the process of being mined or will be mined in the near future under existing mining operations. The Quarry Site also includes a number of isolated, mature, native Valley oak trees and mature, non-native Eucalyptus trees located along the western edge of the Quarry Site, adjacent to the San Joaquin River, that have been avoided under the existing mining operations. The removal of these trees is not planned under existing mining operations.

The Quarry Site is the primary source of aggregate for the Rockfield Quarry mining operations. Mining at the Quarry Site first occurred in 1913 and continued through the 1920s. Mining resumed again in the 1980s and has been ongoing for over 30 years.

Facilities and Supporting Equipment

The Quarry Site currently does not contain any processing or production facilities.

Production and Sales

Because there are no aggregate processing facilities at the Quarry Site, mined aggregate is currently trucked via an interplant haul on North Friant Road to the Plant Site for processing and sales.

Hours of Operation

The permitted hours of operation are shown on Table 2-3, "Quarry Site Existing Permitted Hours of Operation."

Table 2-3
Quarry Site Existing Permitted Hours of Operation

Activity	Typical Hours and Days
Excavation	7 a.m. to 6 p.m., Monday through Friday
Routine maintenance of excavation equipment	7 a.m. to 8 p.m., Monday through Sunday

Table Source: CEMEX 2022.

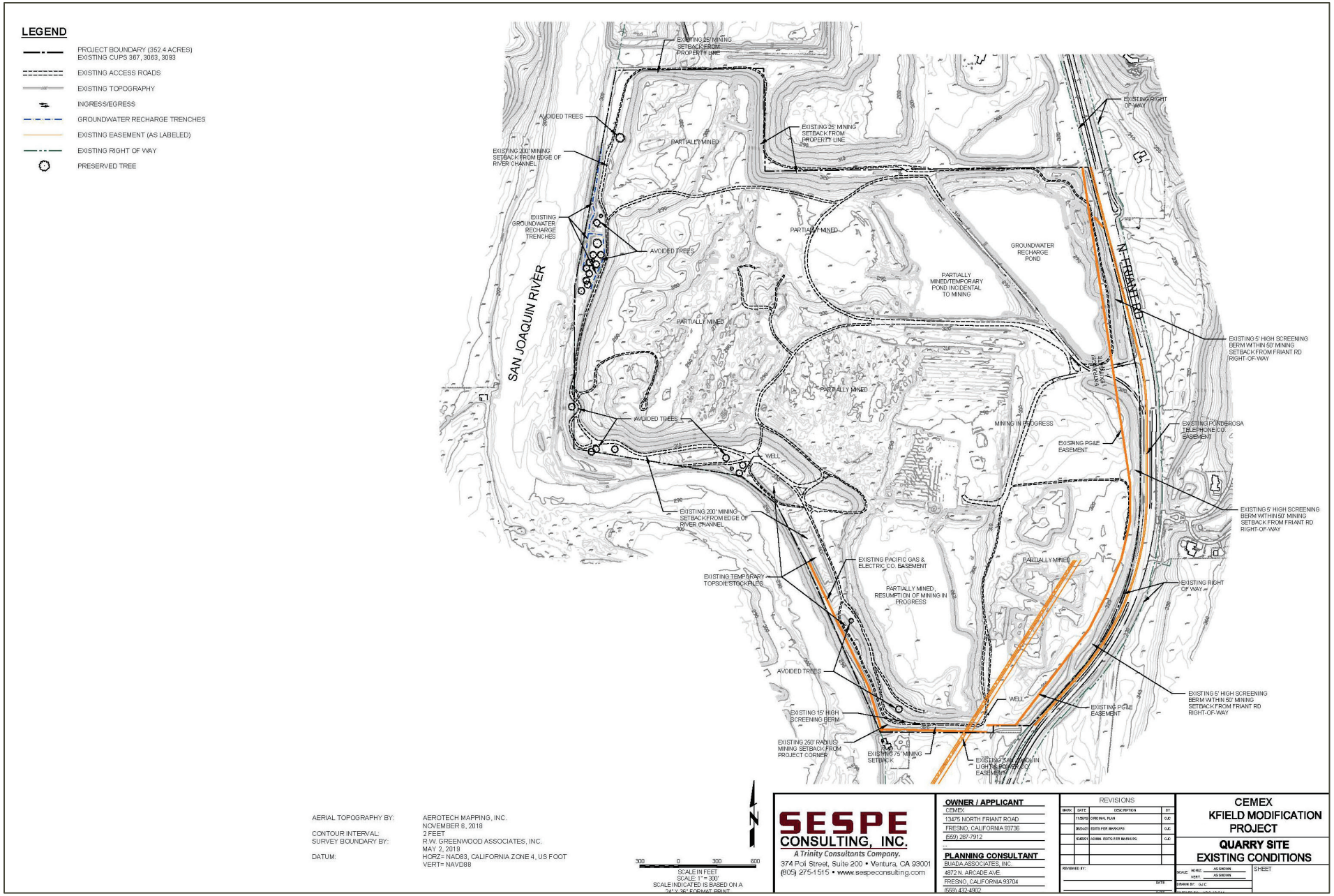
Setbacks

The following setbacks are required under the existing CUPs for the Quarry Site:

1) 200-foot mining setback from the river edge;
2) continued avoidance of specified native trees;
3) 250-foot radius mining setback from the residence just south of the southwest corner;
4) 75-foot mining setback from south boundary between the 250 feet from the southwest corner and 350-feet from North Friant Road right-of-way;
5) 50-feet mining setback from the North Friant Road right-of-way;
6) 25-feet mining setback from other property lines; and
7) no stockpiled soil or material will be placed closer than 25 feet from any property boundary except visual/sound berms.

Screening, Parking, Lighting, and Fencing

There is an existing, minimum five-foot high screening berm along the North Friant Road frontage and an existing minimum fifteen-foot-high screening berm along the south property line, extending from the southwest corner of the site to approximately 475 feet from the North Friant Road right-of-way.



SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Quarry Site Existing Conditions
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 2-4

BENCHMARK RESOURCES

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The perimeter of the Quarry Site along North Friant Road, the south property line, and the west property line is fenced with four-foot high, barbed wire ranch fencing. The property line between Lost Lake Regional Park and the Quarry Site is fenced with six-foot-high chain-link fencing. A chain link gate is located at the entrance to the property.

There is no parking area on the Quarry Site. There is no nighttime lighting on the Quarry Site.

Utilities and Solid Waste Management

A Ponderosa Telephone Company telephone line and PG&E easement run along North Friant Road adjacent to the eastern boundary of the Quarry Site. A San Joaquin Light and Power Company easement is located in the southern half of the Quarry Site. These rights-of-way are shown in Figure 2-4.

Electricity is currently only used by the water truck pump on the Quarry Site and is provided by connections to PG&E power lines located along North Friant Road. There are no drinking water sources, septic systems, solid waste service, telecommunications connections, or natural gas connections at the Quarry Site.

Water Usage

The San Joaquin River is located along the west side of the Quarry Site. No surface water from the river is used at the site. There are two groundwater production wells on site, however currently no water is used from the groundwater wells on this site. One well is located along the western-central edge of the site, and one well is located along the southern boundary of the site (locations are shown on Figure 2-4). In addition, 14 groundwater monitoring wells have been installed around the property. Groundwater levels from 2017 to 2019 ranged from 15-36 feet bgs.

Groundwater and surface runoff from rainfall accumulates in ponded pits created from historic and current mining and is pumped out to accommodate mining operations. The water is used by water trucks for dust control and is pumped to the existing groundwater recharge pond in the northeast corner of the site or is pumped to existing groundwater recharge trenches along the western boundary of the site. The trenches total approximately 2,000 feet in length and are about 5 feet wide. Existing total consumptive use (including both direct groundwater use and indirect loss of rainfall/groundwater through evaporation and evapotranspiration) is estimated to be 440 acre-feet/year.

2.4.3 Facility Operations

The general activities associated with the operation of existing and proposed processing facilities that would operate on both the Plant Site and Quarry Site are described below.

- **Aggregate Plants:** utilize crushing, screening and washing equipment to create different construction grade products. Finished products are stockpiled for later sale. Operation of the plant is controlled from a control room.
- **Ready-mix Concrete Plant:** aggregate products from the aggregate plant and cement (imported by truck and stored in silos) are weighed and deposited directly into the mixer truck drum. Water is added to the truck and the concrete is mixed during transportation to the job site. Return concrete (concrete which is unused at the jobsite and returned to the site in the ready-mix trucks) is stockpiled for later recycling into crushed miscellaneous base. Operation of the plant is controlled from a control room.
- **Hot-mix Asphalt Plant:** aggregate products are dried in a natural gas/propane/diesel-fired dryer/burner and mixed with liquid asphaltic cement to produce asphalt. The hot mixed asphalt may be discharged directly into trucks from the mixer or conveyed to storage silos for discharge into trucks at a later time. Operation of the plant is controlled from a control room.
- **Portable Recycle Plant:** asphalt or concrete to be recycled is fed through a crusher(s), screens and conveyors and then stockpiled. The recycled concrete is sold as crushed miscellaneous base (CMB). The recycled asphalt product (RAP) is blended with fresh asphalt concrete in the hot-mix asphalt plant.

2.4.4 Supplies and Materials Transport, Use, and Storage

Aggregate and asphalt products are hauled off-site by trucking firms. In addition to the applicant's concrete mixer trucks, other concrete companies can purchase ready-mix concrete and transport it in their own trucks. Trucking firms import cement, asphaltic oil, fuel, and construction materials needed to supply the asphalt and ready-mix concrete plants at the Plant Site. Interplant haul from the Quarry Site to the Plant Site is done by trucking firms.

Plant Site

Construction aggregates produced by the aggregate processing plant are stockpiled on the Plant Site. Cement for use in producing ready-mix concrete is delivered and stored in cement silos at the concrete plant. Asphaltic oil for use by the currently inactive, diesel-powered asphalt plant and for the new asphalt plant to produce asphalt was or will be

delivered and stored in tanks in containment. Diesel fuel for the currently inactive asphalt plant was delivered and stored in tanks in containment.

Diesel fuel for use by mobile equipment is delivered and stored in a tank in containment. Gasoline for use by the plant pickup trucks is delivered and stored in a tank in containment. Products needed to service the mobile equipment such as gear and lube oil, transmission fluid and various other products are delivered and stored at or near the maintenance shops. Wastes from the facility are stored in designated containers adjacent to the shop in the containment area and/or within the shops are recycled or disposed of in accordance with local, state and federal safety regulations. All materials are stored in accordance with a Hazardous Materials Business Plan and a Spill Prevention Control and Countermeasure Plan.

Quarry Site

Since there is currently no processing equipment, no materials are stored on-site.

2.4.5 Surrounding Land Uses

Land uses surrounding the Plant Site and Quarry Site are shown on Figure 2-5, "Conditional Use Permits and Surrounding Land Uses," and discussed below.

Plant Site

The Plant Site is bounded on the north, west, and south by lands that were part of the former Ball Ranch, most of which was previously mined for aggregate. The San Joaquin River is located approximately 0.5 miles west of the Plant Site. Little Dry Creek, a tributary of the San Joaquin River, is located approximately 500 feet north of the Plant Site.

The property that borders the Plant Site to the north, west, and south is the Willow Unit Ecological Reserve, owned by California Department of Fish and Wildlife (CDFW). There are several 20-acre farming parcels and other farmland south of the CDFW property. Most of the property north of the Plant Site and generally north of Little Dry Creek is now the Ball Ranch Nature Reserve, owned by the San Joaquin River Conservancy (SJRC). The land east of North Friant Road is primarily open grazing land with several 8 to 10-acre rural residential homesites to the southeast.

Quarry Site

The Quarry Site is bounded on the northwest by Fresno County Lost Lake Regional Park, and to the northeast by lands that were previously mined for aggregate between Lost Lake Regional Park and North Friant Road. The property north of the center of the Quarry Site that was previously mined for aggregate was reclaimed as open space, ponds, and riparian habitat, and is now the Beck Ranch Natural Reserve owned by the SJRC. The property north of the northeast portion of the Quarry Site that was previously mined for aggregate was reclaimed as farmland, open space, ponds, and riparian habitat, and includes a rural residence.

The San Joaquin River flows along the west side of the Quarry Site. Across the river to the west in Madera County, there is farmland to the northwest and a private, gated residential community to the west. The Ledger Island Natural Reserve, land previously mined for aggregate and now owned by the SJRC, is located across the river to the southwest of the Quarry Site.

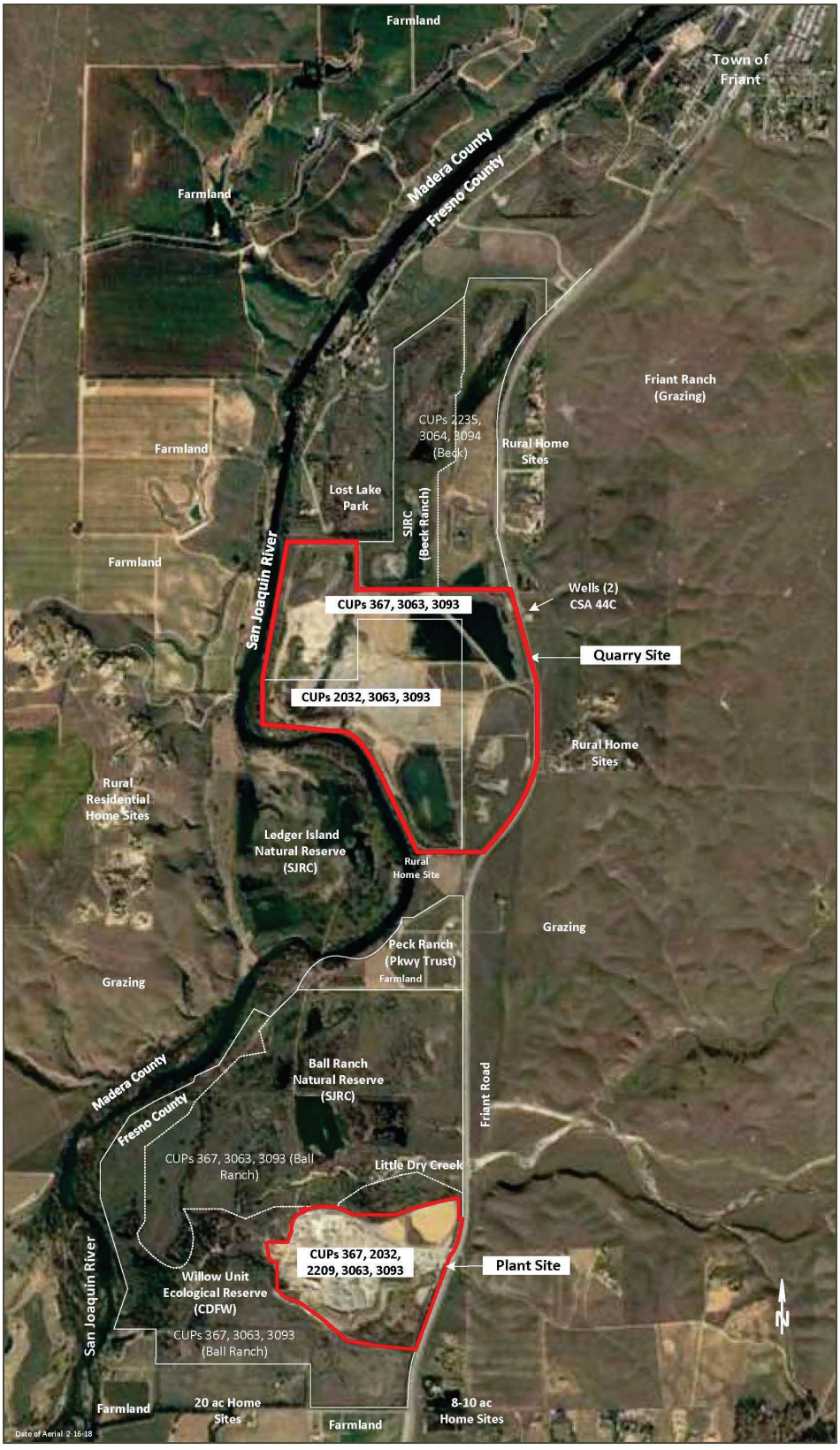
A residence and Peck Ranch farmland owned by the Parkway Trust are located to the south of the Quarry Site. There is a residential community to the northeast overlooking the Quarry Site. A private, gated residential community is located at the base of the foothills southeast of the entrance road to the Quarry Site. The remaining area to the east consists of open grazing land.

2.4.6 Employees

There are currently 55 full-time employees at the Rockfield facility. In addition, there are 22 employees at the applicant's concrete plant in South Fresno, which is supplied with aggregate products produced at the Plant Site, and 15 employees at the applicant's administrative office in Fresno.

2.4.7 Site History

Mining operations at the Rockfield Quarry have been continuous for more than 100 years (1913-present). Since 1960, Fresno County has issued various CUPS for the Plant Site, Quarry Site, and surrounding areas. Table 2-4, "Summary of Conditional Use Permits" lists the date the CUPs that were issued and describes the locations and actions approved. Figure 2-5 shows the location(s) to which the CUPs apply.



SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Conditional Use Permits and Surrounding Land Uses
ROCKFIELD MODIFICATION PROJECT
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Figure 2-5

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Table 2-4
Summary of Conditional Use Permits

CUP Number	Approval Date	Properties	Description
367	9/7/1960	Ball Ranch (including the Plant Site and Quarry Site)	Allowed existing sand and gravel excavation and processing operations, including washing, screening, and grading, on 850 acres that included the Plant Site and Quarry Site. Also permitted processing of materials from the Quarry Site at the processing plant located on the Ball Ranch.
2032	6/7/1984	Quarry Site	Allowed rock, sand, and gravel excavation on an additional 147 acres southwest of CUP 367
367 and 2032	1/8/1985	Ball Ranch and Quarry Site	Settlement Agreement with Fresno County confirming validity of CUP 367. Limited the processing plant operations, asphalt and concrete batch plant operations, and excavation activities to 20 years. Also limited processing of material to that which was extracted from properties permitted under CUP 367 and 2032.
2209	6/10/1986	Plant Site	Extended operating hours.
2235	*7/28/1987*	*Beck Ranch*	*Add 251-acre mining site immediately north of Quarry Site. Allowed aggregate to be processed on the Ball Ranch. (Beck Ranch was mined out and reclaimed in 2009)*
2241	*7/28/1987*	*Plant Site*	*Allowed aggregate mined from Beck Ranch to be processed at Plant Site. (Beck Ranch was mined out and reclaimed in 2009)*
3063	9/25/2003	Quarry and Plant Site	Extended expiration date to 2023 for CUPs 367, 2032 and 2241.
3064	*9/25/2003*	*Beck Ranch*	*Extended expiration date to 2023 for CUP 2235. (Beck Ranch was mined out and reclaimed in 2009)*
3093	10/21/2004	Quarry and Plant Site	Amended CUPs 367, 2032, 2241 and 3063 to increase daily limit on mining and processing from 180 truckloads per day to 225 truckloads per day.
3094	*10/21/2004*	*Beck Ranch*	*Amended CUPs 2235 and 3064 (Beck Ranch) to increase loads from 180 truckloads per day to 225 truckloads per day. (Beck Ranch was mined out and reclaimed in 2009)*

Table Source: CEMEX 2021.
Table Notes: *Italicized* text indicates that mining and processing activities authorized by the CUP have been completed.

2.4.8 Current Operating Entitlements and Vested Rights

Operations at Rockfield Quarry are currently governed by and vested under CUPs 367, 2032, 2209, 3063, and 3093. A summary of the key provisions of the existing CUPs are provided in Table 2-4 above. The Surface Mining and Reclamation Act of 1975 (California Public Resources Code Sections 2710-2796) (SMARA) exempts a vested rights holder from the need to acquire any additional permit to mine from the local permitting agency as long as such vested rights continue and as long as no substantial changes are made in

the mining operation (Public Resource Code Section 2776(a)). Under SMARA, a person is deemed to have a vested right if, "prior to January 1, 1976, the person has, in good faith and in reliance upon a permit or other authorization, if the permit or other authorization was required, diligently commenced surface mining operations and incurred substantial liabilities for work and materials necessary for the surface mining operations." (Id.)

2.4.9 General Plan Land Use Designations

The Fresno County General Plan (Fresno County 2024) designates the land use for the project sites as "Agriculture." The recovery of mineral resources has been ongoing at the combined project sites for more than 100 years (1913-present) and the continued recovery of mineral resources from lands designated Agriculture are allowed under the Fresno County General Plan Policy LU-A.4. Uses that are allowed in the agriculture designation include special agricultural uses and agriculture-related activities, including value-added processing facilities, and certain non-agricultural uses listed in Table LU-1 of the general plan. The project sites also fall within the San Joaquin River Corridor Overlay, as shown on Figure LU-2 of the general plan. The Quarry Site is located adjacent to the southern boundary of the Friant Community Plan Area.

2.4.10 Zoning Classifications

Both the Quarry Site and Plant Site are zoned "AE-20" Exclusive Agriculture, 20-acre minimum parcel size (Fresno County 2022). Surface mining operations and related facilities and activities are permitted in the AE-20 district subject to a CUP under the provisions of Section 858 of the Fresno County Zoning Ordinance.

2.4.11 Mineral Resource Designations

An objective of SMARA is to create a mineral lands inventory by designating certain areas of California as being important for the production and conservation of existing and future supplies of mineral resources. Pursuant to Section 2790 of SMARA, the State Mining and Geology Board has designated certain mineral resource areas to be of regional significance. SMARA requires that a lead agency's land-use decisions involving the designated area be made in accordance with its mineral resource management policies, and that the lead agency consider the importance of the mineral resource to the region as a whole and not just the lead agency's area of jurisdiction.

In 1988 and 1999, the State of California included the Quarry Site and a small portion of the Plant Site in the classification of the aggregate resources in San Joaquin River area as MRZ-2 (areas where a high likelihood exists that significant aggregate deposits are present) (California Department of Conservation, Division of Mines and Geology 1988a and 1999). Fresno County incorporated the MRZ-2 classification into the Mineral

Resources Unit of the Open Space/Conservation Element of the General Plan in 1987. Also in 1988, the State included both the Quarry Site and a portion of the Plant Site as part of the lands designated as having construction grade aggregate deposits that are of regional significance (California Department of Conservation, Division of Mines and Geology 1988b).

The State of California classified the majority of the Plant Site as MRZ-1 (areas where adequate information indicates no significant mineral resources are present) (California Department of Conservation, Division of Mines and Geology 1988a and 1999). However, as described in the SMRP, the applicant's borings of the Plant Site indicate that, although much of the site has been mined and backfilled to depths of between 5 and 32 feet bgs, there are recoverable sand and gravel resources to a depth of about 85 feet bgs.

2.5 PROPOSED PROJECT ELEMENTS

2.5.1 Project Phasing

The proposed project would occur in two stages, as summarized in Section 2.2.2, above. Stage 1 would continue concurrent mining and processing operations and add new operations to both the Quarry Site and the Plant Site for up to 30 years. The final reclamation of the Plant Site would occur at the end of Stage 1. Stage 2 would continue mining and processing operations only at the Quarry Site for approximately 70 additional years. The total project life of the combined Stages 1 and 2 is estimated to be up to 100 years. The final reclamation of the Quarry Site would occur at the end of Stage 2.

2.5.2 Mine Plans

2.5.2.1 Plant Site Mine Plans

The 117.6 acres of the total 138.5-acre Plant Site would be mined in six phases as shown on Figure 2-6, "Proposed Plant Site Plan," and Figure 2-7, "Proposed Plant Site Mining Plan," during Stage 1 of the proposed project. The alluvial deposit on the site would be mined with 2H:1V (horizontal: vertical) cut slopes to a depth of approximately 85 feet bgs. Mining operations would be initiated by the removal of overburden materials (such as subsoils or clays) that lie above the sand and gravel deposits. Topsoil would be removed separately and stored in clearly labeled stockpiles for later use as the final cover in reclamation. The other overlying materials (overburden) would be used as fill in the bottom of the excavation, or stockpile for later use as fill. Under typical conditions, topsoil removal will take place approximately one year ahead of mining. If topsoil or overburden stockpiles are expected to remain longer than one year, the stockpiles would be protected from wind and erosion by planting with an erosion control mix of grasses and forbs.

Topsoil and overburden removal would be primarily accomplished using scrapers supported by water trucks to minimize dust.

Aggregate would be excavated using conventional mining equipment such as front-end loaders, scrapers, graders, excavators/front end loaders, and bulldozers, and then loaded onto haul trucks for transport to the processing plant. Water trucks would be used to minimize dust. When groundwater is reached, dewatering would be implemented. Water pumped from pit areas would be pumped into groundwater recharge trenches that would be developed along the west and south sides of the Plant Site (see Figure 2-7). The trenches would total approximately 5,000 feet in length and would be approximately 5 feet wide.

For the Plant Site, the locations of processing and storage areas, including locations of equipment, structures, and facilities would remain the same as under existing conditions (see Figures 2-3 and 2-7).

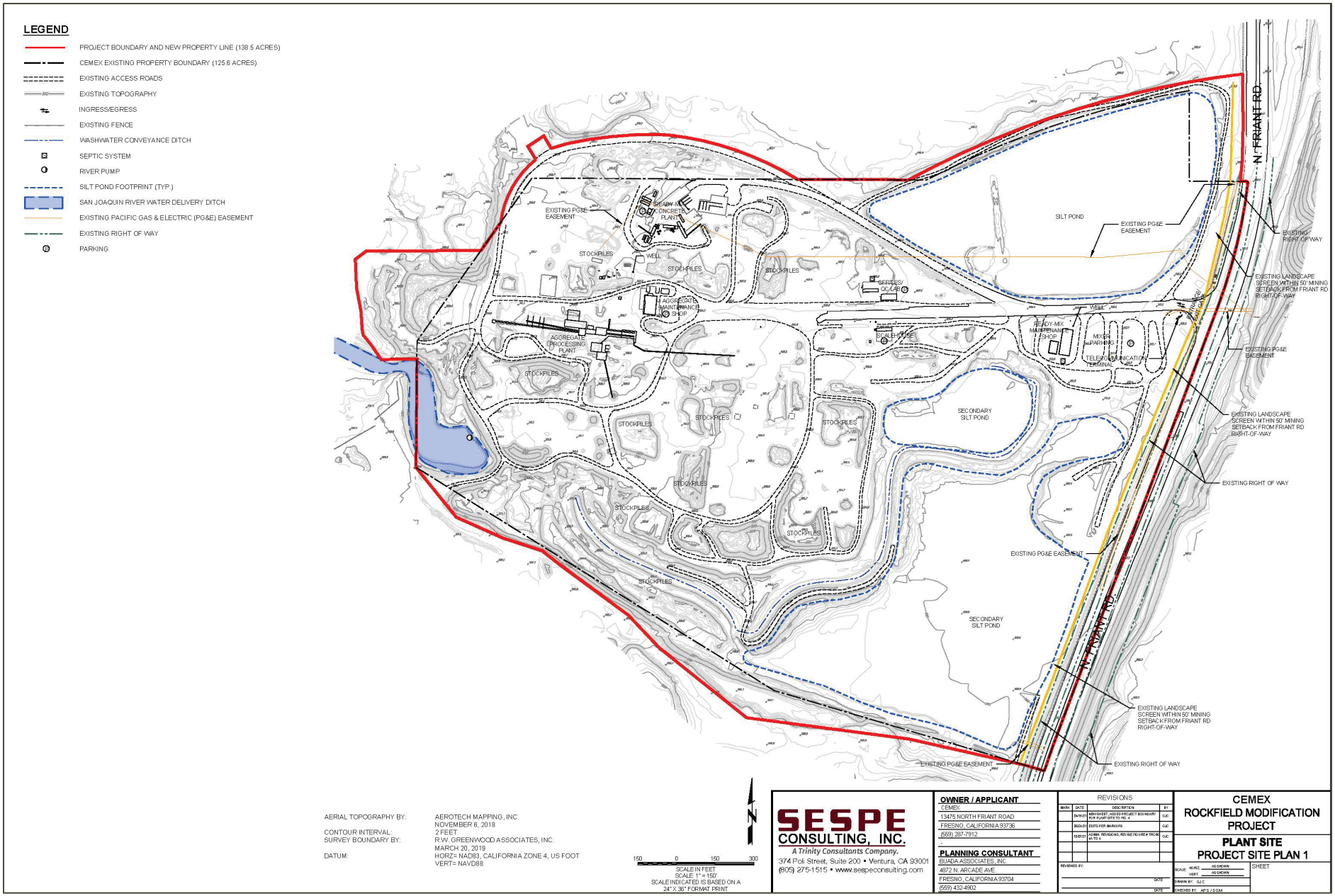
Facilities and Supporting Equipment

The facilities and supporting equipment would remain on the Plant Site during Stage 1 of the proposed project, with the exception of the diesel-powered asphalt plant that was active until about 2009 and has since been removed; this plant would be replaced by a modern asphalt plant powered by propane or natural gas.

Supporting equipment associated with the proposed asphalt plant is summarized as follows:

- **Hot-mix Asphalt Plant:** supporting equipment would include aggregate storage bunkers; conveyors; elevators; burner/dryer; storage silos; dust silo; pollution control equipment; storage tanks; control tower; maintenance shop; and other accessory equipment.

During the final phase of mining (Phase 6), the aggregate plant, concrete batch plant, and asphalt plant would be removed to allow for mining of aggregate materials under these facilities. An electric-powered, portable aggregate plant would be brought to the site and used to process the remaining aggregate. The portable plant will include such equipment as front-loaders, crushers, screens, sand screws and conveyors.



SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Proposed Plant Site Plan
ROCKFIELD MODIFICATION PROJECT
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Figure 2-6

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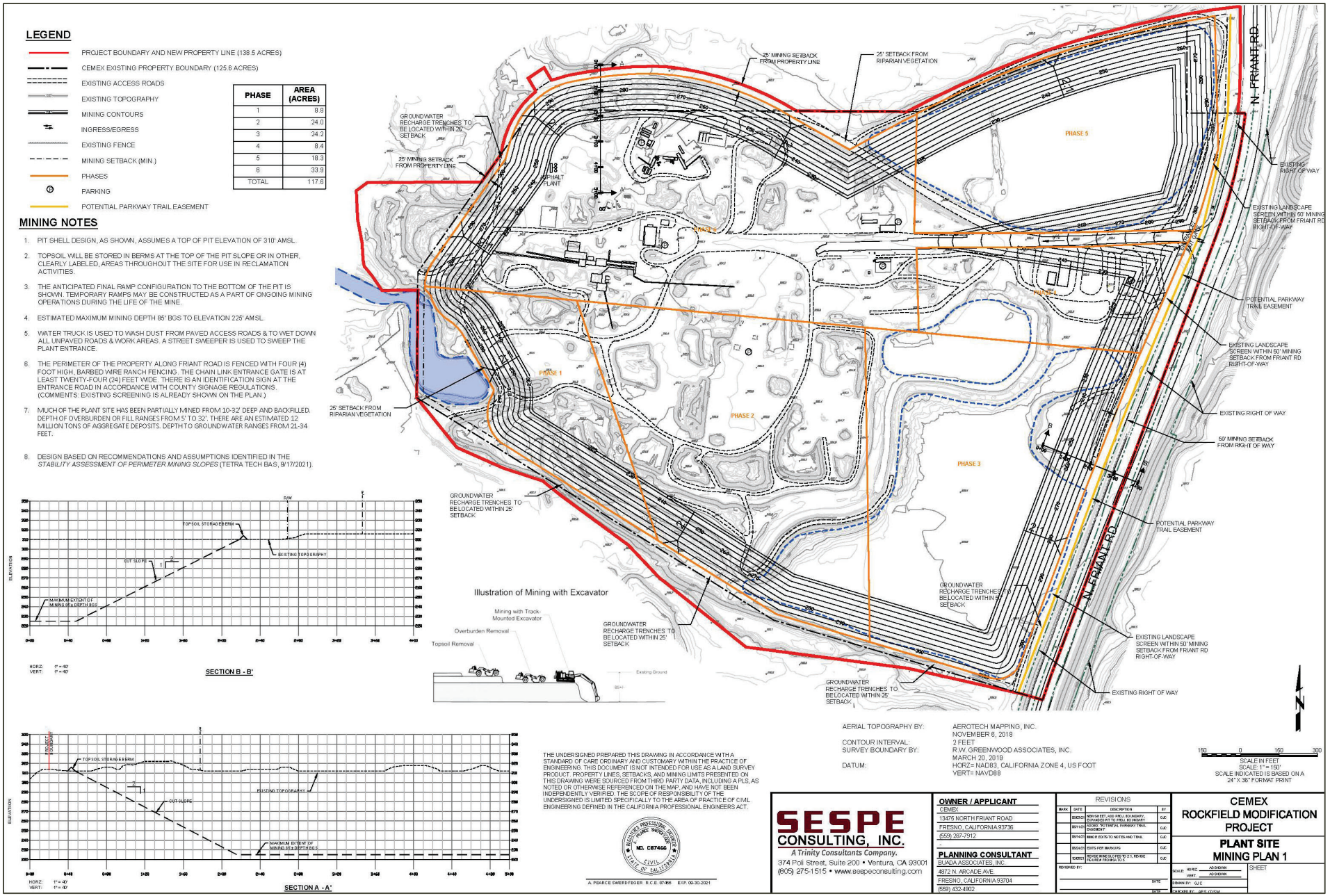

SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Proposed Plant Site Mining Plan
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Figure 2-7

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Production and Sales

During Stage 1, aggregate mined from the Plant Site would be processed at the existing aggregate plant and sold. Ready-mix concrete would continue to be produced at the existing ready-mix concrete plant and sold. The existing, inactive asphalt plant would be replaced by a modern asphalt plant and asphalt sales would resume. Aggregate products not used by the asphalt and ready-mix plants at the Plant Site will be hauled off-site by trucking firms. Recycling would be increased at the Plant Site through the import of concrete and asphalt debris that would be recycled onsite into crushed miscellaneous base and recycled asphalt product (under existing conditions, only come-back concrete is recycled). Crushed miscellaneous base (CMB) would be sold and recycled asphalt product (RAP) would be used on-site in asphalt production.

Setbacks

The Plant Site mine plan (see Figure 2-7) is designed to avoid the existing riparian forest community just outside the northern boundary of the Plant Site. In addition, the mining setbacks required under the existing CUPs (see Section 2.4.2, above) would remain the same.

Screening, Parking, Lighting, and Fencing

The existing landscaped screen along the North Friant Road frontage would remain under the proposed project. The existing on-site parking for employees, customers, service/delivery vehicles and concrete mixers would also remain (see Figures 2-3 and 2-7). The existing nighttime lighting would remain. Additional nighttime lighting would be installed at the proposed hot-mix asphalt plant.

As described under Section 2.4.2, above, the perimeter of the property along Friant Road is fenced with four-foot-high, barbed wire ranch fencing with a chain link entrance gate. Under the proposed project, the entire perimeter of the property would be fenced with minimum four-foot-high, ranch fencing consisting of metal T-posts and at least three strands of barbed wire in accordance with Section 858 H.4 of the Fresno County Zoning Ordinance. The fencing would be erected upon project approval.

Utilities and Solid Waste Management

Domestic sewage would continue to be handled by the two conventional septic systems and serviced as necessary by commercial septic services. Solid waste would continue to be deposited in dumpsters for pickup and disposal by a licensed solid waste disposal company. The proposed hot-mix asphalt plant would be powered by a connection to an existing natural gas pipeline in Friant Road.

Water Usage

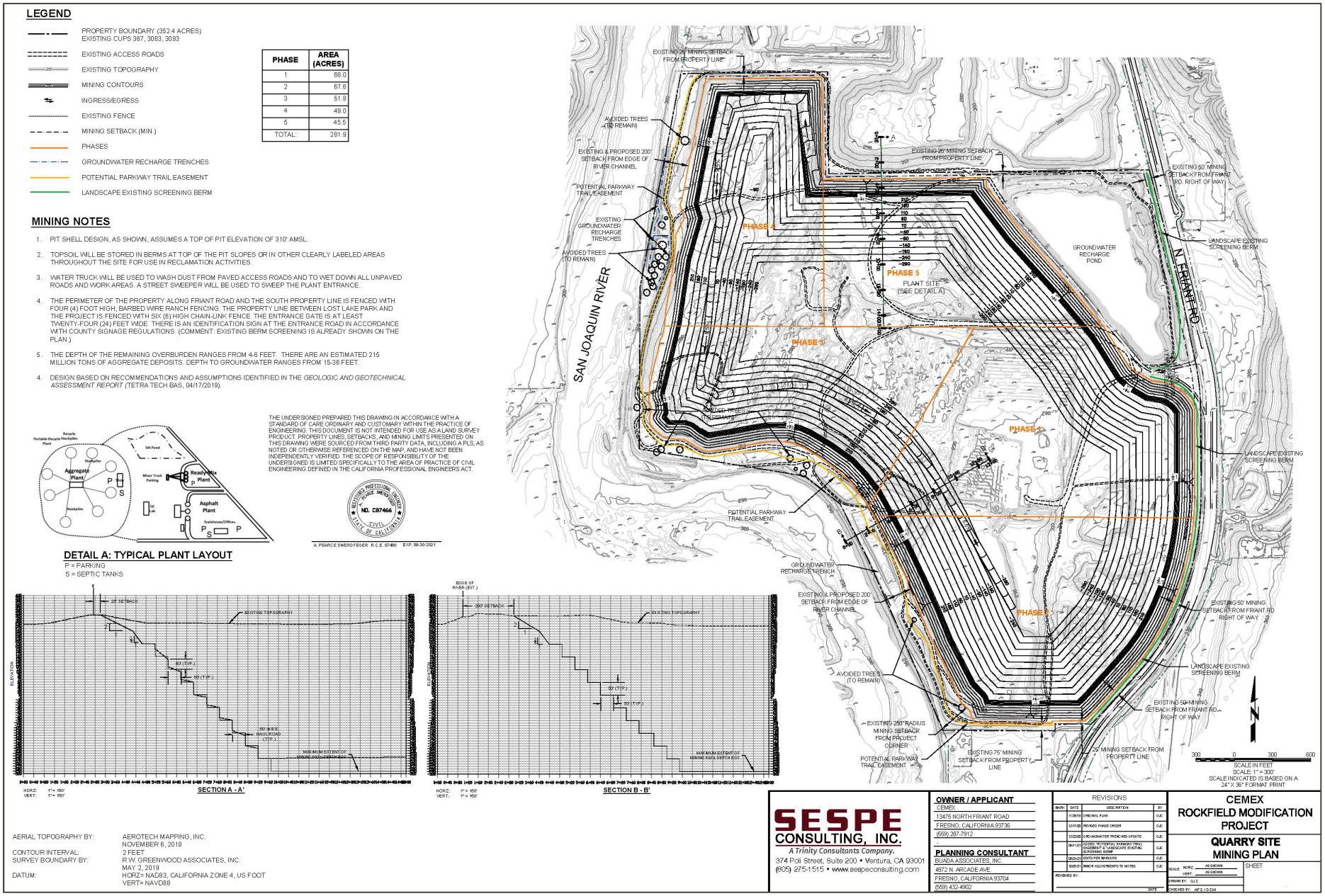
Once the aggregate plant at the Quarry Site is in operation, aggregate processing at the Plant Site would be reduced by an estimated 80%. Total consumptive use of river water would be reduced from approximately 295 acre-feet/year to an estimated 125 acre-feet/year. The planned increase in concrete production would increase groundwater consumptive use from approximately 35 acre-feet/year to approximately 60 acre-feet/year.

2.5.2.2 Quarry Site Mine Plans

281.9 acres of the total 352.4-acre Quarry Site would be mined in five phases as shown on Figure 2-8, "Proposed Quarry Site Mining Plan." The existing groundwater recharge pond in the northeast corner of the site would not be mined. For any areas not already mined under the existing CUPs, mining operations would be initiated by the removal of any overburden materials (such as subsoils or clays) that lie above the sand and gravel deposits. Topsoil would be removed separately and stored in clearly labeled stockpiles for later use as the final cover in reclamation. The overburden and fines recovered from the aggregate processing would either be directly placed to reconstruct slopes above the hard rock to 2H:1V (alluvium) and ¾H:1V (weathered granite) or stockpiled for later use in reclamation.

Under typical conditions, topsoil removal will take place approximately one year ahead of mining. The other overlying materials (overburden) would either be directly placed to reconstruct slopes above the hard rock to 2H:1V (alluvium) and ¾H:1V (weathered granite) or stockpiled for later use in reclamation. If topsoil or overburden stockpiles are expected to remain longer than one year, the stockpiles would be protected from wind and erosion by planting with an erosion control mix of grasses and forbs. Topsoil and overburden removal would be primarily accomplished using scrapers supported by water trucks to minimize dust.

Any remaining alluvial aggregate would be excavated using conventional mining equipment including front-end loaders, scrapers, graders, excavators/front end loaders, and bulldozers, and then loaded onto haul trucks for transport to the proposed aggregate processing plant that would be added to the Quarry Site at the start of Stage 1 activities (an electric-powered, portable aggregate processing plant may be used initially). Mining of the hard rock would begin in the center of the site to establish safe blast designs and allow for groundwater monitoring during hard rock blasting and mining. The hardrock would then be mined in approximately 50-foot-high benches by drilling and blasting of the hardrock material to a depth of approximately 600 feet bgs using a drill rig and truck with blasting supplies.



SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Proposed Quarry Site Mining Plan
ROCKFIELD MODIFICATION PROJECT
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Figure 2-8

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If necessary, secondary breakage of oversize material within the quarry pit would be accomplished by conventional methods including, but not limited to, drop ball or hydraulic breaker.

Initially, the rock would be loaded into haul trucks by excavators or front-end loaders and transported to the proposed on-site processing plant where the rock will be further crushed, screened, rinsed and sorted. As mining progresses deeper, a primary crusher would be located in the pit and pit material would be transported to the processing facility by means of a conveyor system. Water from pit areas would be pumped into existing and proposed groundwater recharge trenches developed along the western perimeter of the Quarry Site (see Figure 2-8). The proposed new trenches would total approximately 4,000 feet in length and would be 5 feet wide. Therefore, with the proposed project, the total length of groundwater recharge trenches on the project site would be 6,000 feet.

Facilities and Supporting Equipment

There are currently no processing and storage areas on the Quarry Site. An aggregate processing plant, a building containing offices and a scale house, a quality control (QC) lab, and a maintenance shop would be added to the Quarry Site as part of Stage 1. An electric-powered, portable aggregate plant may be used at the Quarry Site at the start of Stage 1, before the new aggregate plant is erected.

Supporting equipment associated with the aggregate processing plants is summarized as follows:

- **Aggregate Processing Plant:** supporting equipment would include front-end loaders; water; truck; conveyors; screens; screening towers; crushers; washers; sand cyclones; sand screws, sand/aggregate truck loadout bins; pollution control equipment; dewatering equipment and tanks; recycle water pumps; computer control tower; a maintenance shop; quality control lab; fuel tanks; and other accessory equipment and buildings.
- **Electric-powered, Portable Aggregate Plant:** supporting equipment would include front-loaders, crushers, screens, sand screws, and conveyors.

At the end of Stage 1, a ready-mix concrete plant, hot-mix asphalt plant, and diesel-powered, portable plant to recycle imported concrete and asphalt debris, would be developed on the Quarry Site. The supporting equipment described in Section 2.4.2.1, above, for the ready-mix concrete plant and the diesel-powered, portable recycling plant would also be added to the Quarry Site. Additionally, the supporting equipment

described in Section 2.5.2.1, above, for the proposed hot-mix asphalt plant would also be added to the Quarry Site.

The aggregate processing plant, ready-mix concrete plant, hot-mix asphalt plant, offices/scale house, QC lab, and maintenance shop would be located within an approximately 42-acre area, shown as the "plant site" on Figure 2-8. These facilities would all be located in a previously excavated pit approximately 30 feet bgs. This area is centrally located in accordance with standard H.23, Section 858 of the Fresno County Zoning Ordinance. The area where these facilities are located would be mined as part of Phase 5. Prior to mining of this area, the facilities would be removed, and an electric-powered, portable aggregate plant would be used to process the remaining aggregate materials.

Production and Sales

During Stage 1, an aggregate processing plant would be added to the Quarry Site to wash, screen, crush and sort the aggregate mined from the Quarry Site. Those aggregate products produced at the proposed aggregate plant for the asphalt and ready-mix plants would be transported approximately 1 mile south to the Plant Site via an interplant haul on North Friant Road, in the same manner as raw aggregate is currently being transported from the Quarry Site to the Plant Site for the existing operations. Aggregate products produced at the Quarry Site, not used by the asphalt and ready-mix plants at the Plant Site, would be sold directly from the Quarry Site.

During Stage 2, ready-mix concrete and asphalt would be produced and sold on the Quarry Site to replace the plants removed from the Plant Site. The periodic use of a diesel-powered, portable plant to recycle imported concrete and asphalt debris (including imported) into crushed miscellaneous base and recycled asphalt product would also be added to the Quarry Site from the Plant Site. Crushed miscellaneous base would be sold and recycled asphalt product would be used in asphalt production.

Setbacks

The Quarry Site mine plan is designed to continue avoidance of the riparian corridor along the San Joaquin River. In addition, the mining setbacks required under the existing CUPs (see Section 2.4.2, above) would remain the same.

Screening, Parking, Lighting, and Fencing

The existing screening berms along North Friant Road frontage and the south property line would remain in place.

At the Quarry Site, new nighttime lighting fixtures would be required. Mining operations would occur primarily during daylight hours; however, some operations may occur during nighttime hours. For operations during the time of year when there are less daylight hours, or during any nighttime operations, some lighting would be required to provide a safe working environment. High pressure sodium and/or cut-off fixtures (or equivalent International Dark-Sky Association [IDA]-approved fixtures) would be used instead of mercury-vapor fixtures for any required nighttime lighting. The lighting design is intended to confine illumination to the Quarry Site and/or to areas that do not include light-sensitive uses.

As shown on Figure 2-8, the proposed 42-acre "plant site" at the Quarry Site would contain on-site parking for employees, customers, service/delivery vehicles and concrete mixers. Currently, the north property line is fenced between Los Lake Park and the Quarry Site. Under the proposed project, the remainder of the north property line would be fenced with minimum four-foot—high, ranch fencing consisting of metal T-posts and at least three strands of barbed wire. Additionally, the existing berm along the north Friant Road would be landscaped with trees that will grow at least 15 feet high in two staggered rows, with one row on top of the berm. Irrigation would be provided. An architecturally designed gate would be added at the site entrance when the landscaping is added to the existing berm along North Friant Road.

Utilities and Solid Waste Management

At the Quarry Site, domestic sewage would be handled by two conventional septic systems located at the plant site. The septic systems would be serviced as necessary by commercial septic services. Solid waste, e.g., parts packaging, paper, etc., would be deposited in dumpsters for pickup and disposal by a licensed solid waste disposal company.

Electricity and telecommunications services would be provided to plant site facilities via connections to existing PG&E power lines and telecommunications facilities along North Friant Road. The office/scale house and asphalt plant (Phase 2 only) would be provided with natural gas by connections to the existing natural gas pipeline along North Friant Road.

Water Usage

The proposed project would deepen mining at the existing Quarry Site to include the hardrock, and an aggregate processing plant would be added to the Quarry Site. Surface runoff from rainfall and/or groundwater encountered within the excavation would be pumped to the aggregate plant as process water to wash the rock. Approximately 10% of the process water would be retained by the aggregate products. Residual wash water

(approximately 90%) would be sent to a silt pond to settle out silts. Water from the silt pond would then be recycled back to the plant as processed water. Additional water accumulated in the excavation would continue to be used by water trucks for dust control, pumped to the existing groundwater recharge pond in the northeast corner of the site, and pumped to groundwater recharge trenches along the western boundaries of the site. When sales reach 3.0 MT per year, total consumptive use (including both direct use of groundwater from excavations and ponded pits and indirect loss of rainfall/groundwater through evaporation and evapotranspiration) would increase from the existing 440 acre-feet/year to an estimated 465 acre-feet/year during Stage 1 operations and 510 acre-feet per year during Stage 2 operations.

In addition, approximately 56 acre-feet/year of groundwater from the existing well at the southeast corner of the Quarry Site would be consumed when the ready-mix concrete plant (55 acre-feet/year) is added to the site and for domestic use (1 acre-feet/year); the well located along the western boundary of the Quarry Site would remain unused.

Blasting

As described above, the quarry hardrock would be mined in approximately 50-foot-wide benches by drilling and blasting of the hardrock material to a depth of approximately 600 feet bgs. The purpose of blasting is to break off and fracture bedrock into pieces that can fit into a rock crusher. When a blast hole is filled with explosive material, which is then detonated, the explosion produces a high temperature, high-pressure gas. This gas pressure, known as the "detonation pressure," crushes the rock adjacent to the borehole. The detonation pressure rapidly dissipates, consuming approximately ten to fifteen percent of the energy available in the explosive. The remaining energy produces a second, lower pressure gas, known as the "explosion pressure." Most of the work done by the explosive is done by the explosion pressure. The explosion pressure expands the cracks made by the detonation pressure and pushes the fractured rock toward the free face. This entire process occurs within a few hundredths of a second after the detonation and takes place within about twenty feet of a typical quarry blast hole.

All quarry blasts today consist of many charges detonated several hundredths or thousandths of a second apart. Research has shown that several charges detonated only a few thousandths of a second apart not only produce less ground vibration but are also more effective at fracturing and moving rock than a simultaneous detonation of all charges. The interval at which charges are denotated is called the "delay interval."

The estimated borehole depth at the Quarry Site quarry would be approximately 50 feet. Boreholes would be drilled using a percussion drill rig. All blasting would be performed by a California licensed blasting contractor. The blast designs would change based on the

distance between the planned blasting location and the nearest sensitive receptors. The blast design modifications could include modifying the maximum pounds of explosive material per delay interval and using different borehole diameters typically ranging from 3.5 inches to 6.75 inches. Blasting would occur one to two times per week on weekdays between the hours of 10 a.m. and 2 p.m.

2.5.3 Hours of Operation

The proposed hours of operation at both the Plant Site and Quarry Site are presented in Table 2-5, "Proposed Typical Hours and Days of Operation."

Table 2-5
Proposed Typical Hours and Days of Operation

Activity	Typical Hours and Days[1,2]
Excavation, Aggregate, and Recycle Processing	6 a.m. - 7 p.m., Monday through Friday
Loading, Unloading, and Aggregate Trucking[3]	4 a.m. - 9 p.m., Monday through Friday
Asphalt and Ready-Mixed Concrete Plants[4]	4 a.m.-6 p.m., Monday through Friday, May - October 5:30 a.m.-6 p.m., Monday through Friday, November - April 6 a.m.-2 p.m., Saturdays
Blasting	10 a.m. – 2 p.m., Monday through Friday 1 to 2 times per week

Table Source: CEMEX 2021.
Table Notes:
1. Maintenance of mobile and plant equipment extend beyond these hours.
2. Continuous 24 hours per day operation may be required for major public road projects that are required to be completed during night hours or on weekends to avoid traffic conflicts or during periods of public emergency affecting the health and safety of the community. This is not applicable to blasting operations and recycle processing.
3. Major public road projects may be required to be completed during night hours or on weekends to avoid traffic conflicts. Such projects may require loading operations beyond the hours and days of operation shown.
4. Asphaltic oil, cement, propane, and other supplies may be delivered during nighttime hours.

2.5.4 Employees

Approval of the project would allow the continued employment of the existing 55 on-site and 37 off-site full-time employees and an estimated 5 additional full-time on-site employees.

2.5.5 Supplies and Materials Transport, Use, and Storage

Similar to existing conditions supplies, materials, and products would be imported and exported to and from the Plant Site and Quarry Site by trucking firms. Access to the Plant Site and Quarry Site would remain the same as under existing conditions. The existing and proposed daily one-way truck trips under existing conditions and under Stages 1 and 2 of the proposed project are summarized in Table 2-6, "Existing and Proposed Daily Truck Trip Generation."

Table 2-6
Existing and Proposed Daily Truck Trip Generation

Description	Employees	Interplant Truck Haul	All Other Trucks	Total Annual Average Daily Truck Trips
Existing	110	450	240	690
Project Stage 1 at 2.0 MTY (5 years)	114	134	560	694
Project Stage 1 at 3.0 MTY (10-30 years)	120	216	860	1,076
Project Stage 2 - 3.0 MTY (30-100 years)	120	0	944	944

Table Source: CEMEX 2021.
Table Notes: Estimated trips are one-way trips.

Plant Site

Supply and materials transport, use, and storage would be the same as under existing conditions, with the exception that asphaltic oil, currently not in use because the former asphalt plant was removed, would be imported to the Plant Site for the new asphalt plant. The asphaltic oil would be delivered and stored in tanks in containment. The modern plant would be fueled by propane until natural gas is available.

Quarry Site

Under the proposed project, construction aggregates produced by the new aggregate processing plant would be stockpiled near the processing plant. When the asphalt plant is relocated from the Plant Site propane may be delivered and used as fuel until natural gas is available. Asphaltic oil for use by the asphalt plant to produce asphalt would be delivered and stored in silos or tanks in containment. When the ready-mix concrete plant is relocated from the Plant Site cement would be delivered and stored in cement silos at the concrete plant. Diesel fuel for use by mobile equipment would be delivered and stored in a tank in containment. Gasoline for use by the plant pickup trucks would be delivered and stored in a tank in containment. Products needed to service the mobile equipment such as gear and lube oil, transmission fluid and various other products would be delivered and stored at or near the maintenance shops. Wastes from the facility would be stored in designated containers adjacent to the shop in the containment area and/or within the shops and disposed of in accordance with local, state, and federal safety regulations. Explosives used in blasting would not be stored on-site but would be brought to the site by the California licensed blasting contractor. All materials will be stored in accordance with a Hazardous Materials Business Plan and a Spill Prevention Control and Countermeasure Plan.

2.5.6 Water Quality

The applicant would continue to comply with local, state, and federal regulations regarding the protection of surface water and groundwater at the Plant Site and the Quarry Site. Pollution control programs include Storm Water Pollution Prevention Program; Hazardous Materials Business Plan (SWPPP); a Spill Prevention Control and Countermeasure Plan (SPCC); Employee Training; Record Keeping; Preventative Maintenance; and Best Management Practices as required by existing permits for the sites.

2.5.7 Reclamation

2.5.7.1 Plant Site Reclamation Plans

The Plant Site would be mined in six phases creating a single excavation. Upon completion of mining at the Plant Site at the end of Stage 1, operations at the Plant Site would cease, all equipment and septic systems would be removed, and the site reclaimed as 138.5 acres of open space, and riparian and open water wildlife habitat. The proposed final reclaimed conditions on the Plant Site are shown on Figure 2-9, "Plant Site Final Reclaimed Conditions."

Overburden and fines recovered from the aggregate processing would be used as fill to reclaim the bottom 20 feet of the quarry pit. It is estimated that an approximately 100.5-acre, 20-foot-deep pond would form above the reclaimed bottom from groundwater and rainfall. Topsoil would be added as the final cover to the slopes above the pond. The groundwater recharged trenches would be filled with native soil and seeded with native grasses and forbs. The wash water conveyance ditch and silt ponds would be removed with mining. For the west stockpile area that would not be mined, the stockpiles would be removed, the area graded to drain to the reclaimed excavation to the east and then seeded with native grasses and forbs and planted with native plants. Following the completion of mining the river water delivery ditch would remain in place to preserve existing habitat but would no longer function as a delivery ditch. Final slopes would be seeded with native grasses and forbs and planted with native plants. The seed mix would be sown or hydroseeded during the rainy season which will negate the need for irrigation. A program of noxious weed management would be implemented if weeds compete with revegetation success. The performance criteria in Table 2-7, "Summary of Vegetation Performance Criteria," would be used to determine revegetation success following at least two years without human intervention, such as irrigation.

Table 2-7
Summary of Vegetation Performance Criteria

Monitored Characteristic	Performance Criteria
Percent Cover	75% cover of all species[1] combined per 25 sq. ft. area
Density	2 native trees or shrubs per 150 feet of bank (Plant Site)
Species Richness	6 native species per 25 sq. ft. area

Table Source: CEMEX 2021
Table Notes:
1. Vegetation includes both introduced and volunteer species, native and non-native naturalized to the region.

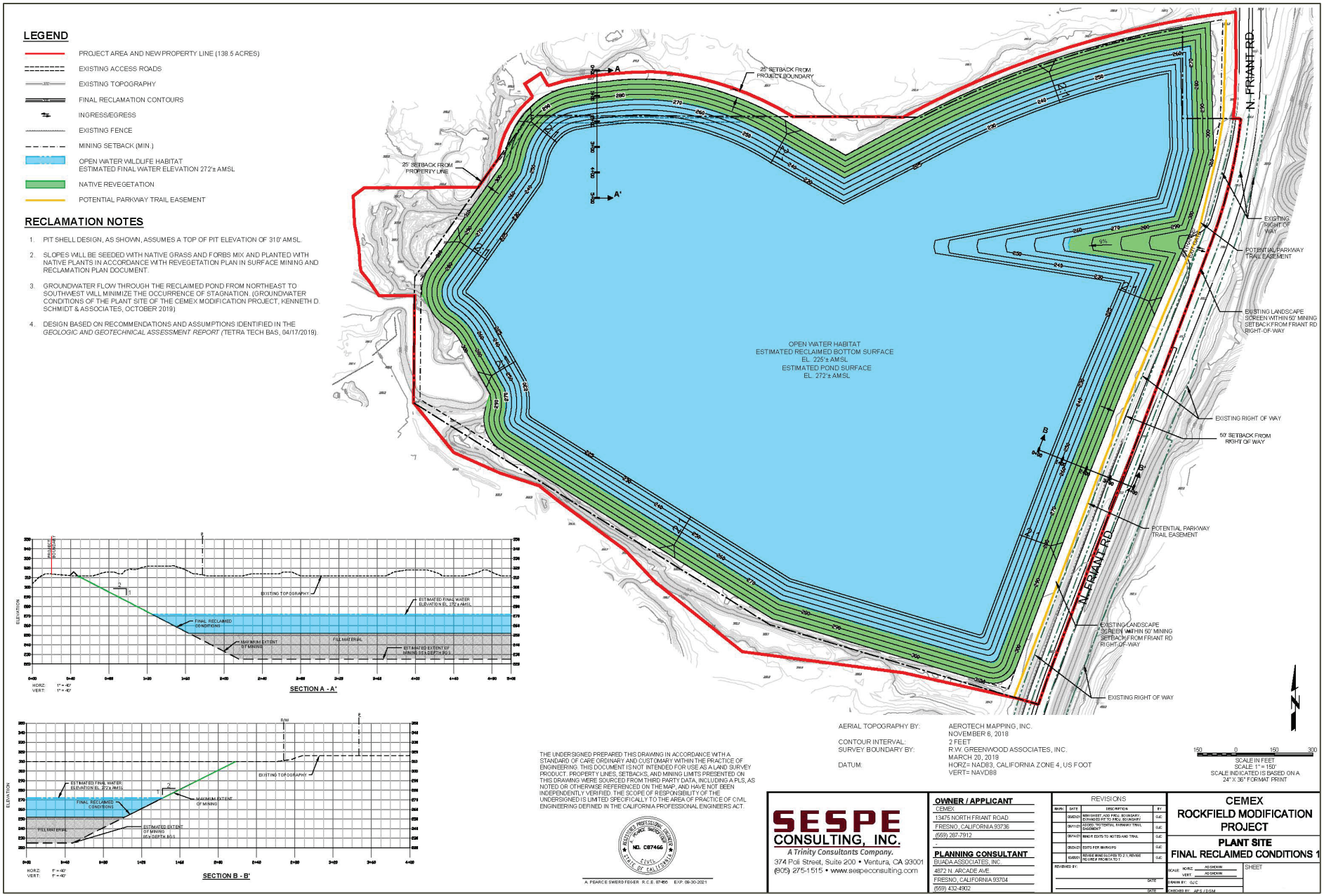
Within two years of the completion of excavation of each of the six phases of excavation, reconstruction and revegetation of the slope that would face the future pond would be completed.

Monitoring and groundwater production wells would be abandoned in accordance with all applicable local and state provisions. Perimeter roads would be left in place for access purposes.

2.5.7.2 Quarry Site Reclamation Plans

The Quarry Site would be mined in five phases creating a single excavation with an approximately 108-acre, 100-foot-deep lake created from groundwater and rainfall in the excavation bottom. Upon completion of mining at the Quarry Site at the end of Stage 2, mining operations and dewatering would cease, all equipment related to mining and aggregate processing and septic systems would be removed. Water levels would continue to be monitored for several years to assess whether pumping from the quarry pit into the Northeast Pond and groundwater recharge trenches would need to continue after mining is completed. Therefore, equipment related to water management, such as pumps, piping, monitoring wells, and related electrical infrastructure, may remain. The site would be reclaimed to approximately 352.4 acres of open space, and riparian and open water wildlife habitat. The proposed final reclaimed conditions on the Quarry Site are shown on Figure 2-10, "Quarry Site Final Reclaimed Conditions."

The quarry walls above the hardrock have been or would be developed with slopes of 2H:1V in the alluvium materials and slopes of ¾H:1V in the hardrock. Slopes above the hardrock benches would be seeded with native grasses and forbs. The seed mix would be sown or hydroseeded during the rainy season which will negate the need for irrigation.



SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Plant Site Final Reclaimed Conditions
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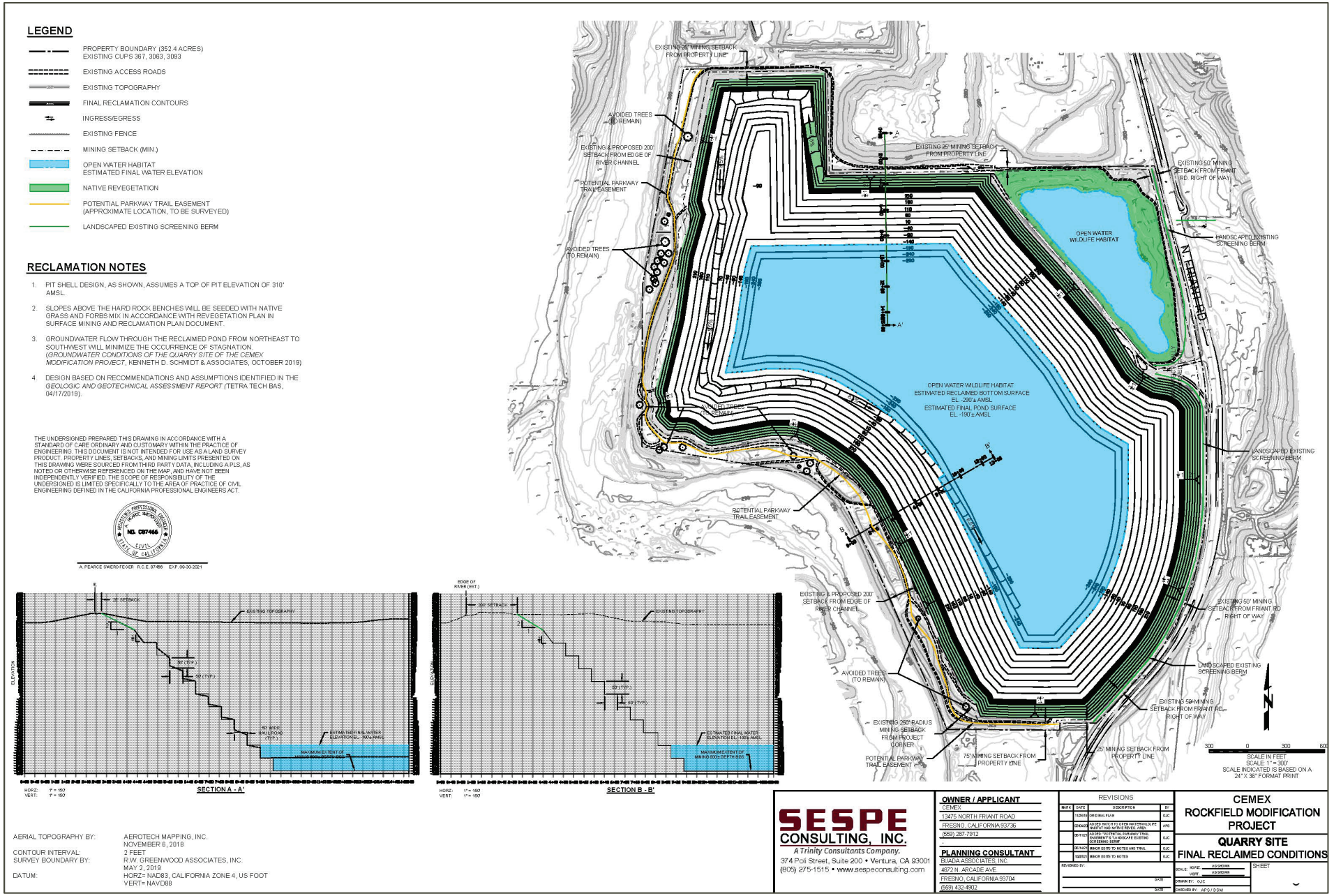

SOURCE: CEMEX 2021; arranged by Benchmark Resources in 2022

Quarry Site Final Reclaimed Conditions
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Figure 2-10

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A program of noxious weed management would be implemented if weeds compete with revegetation success. The performance criteria in Table 2-7 would be used to determine revegetation success following at least two years without human intervention, such as irrigation.

Within two years of the completion of excavation of each of the five phases of excavation, reconstruction and revegetation of the slope that would face the future pond would be completed.

Any monitoring and groundwater production wells not required for long-term post-reclamation monitoring would be abandoned in accordance with all applicable local and state provisions. Perimeter roads would be left in place for access purposes.

2.5.8 Trail Easements

The applicant is in discussions with the San Joaquin River Conservancy's (SJRC) Executive Officer towards providing trail easements at the Plant Site and Quarry Site. The Plant Site trail easement would be located along the eastern boundary of the Plant Site within the 50-foot setback from North Friant Road (shown on Figures 2-7 and 2-9). The Quarry Site trail easement would be located along the western boundary of the Quarry Site within the 200-foot setback from the San Joaquin River (shown on Figures 2-8 and 2-10). These trail easements would set aside areas that could be developed for trails during the mining period, which would facilitate the implementation of the *Fresno County Regional Bicycle & Recreational Trails Master Plan* (Bicycle Master Plan) (Fresno County 2013) and the *San Joaquin River Parkway Master Plan Update* (Parkway Master Plan) (SJRC 2018), both of which envision a system of connected trails along the San Joaquin River between the City of Fresno and Town of Friant (plans are described in more detail in Section 4.17, "Transportation," of this Draft EIR). When combined, the two potential easements would provide the potential for the planned trails in the area to be extended an additional three miles.

Development of these potential future trails was evaluated programmatically in the San Joaquin River Parkway Master Plan Update EIR (SCH No. 2013061035, certified in 2018). The trails are not currently proposed for development and construction details are not yet available. Thus, further CEQA review at this time is not warranted. Should these trails be proposed for development in the future, project-level CEQA review would be required prior to construction.

2.6 DISCRETIONARY ACTIONS

It is anticipated that this Draft EIR will provide environmental review for all discretionary approvals and actions necessary for this project. A number of permits and approvals would be required before the changes in operation at the project sites could proceed, although quarrying operations pursuant to the currently effective land use permits (CUPs 367, 2032, 2209, 3063, and 3093) are anticipated to continue throughout the environmental review process period.

As lead agency for the proposed project, the County is primarily responsible for the approvals required. The applicant has applied to the County for two CUPs (CUP Application Nos. 3666 and 3667) to allow the Rockfield Quarry a continuation and modification of its current aggregate (rock, sand, and gravel) mining and processing operations. As part of any approval action for the project, the County would be required to certify the final EIR, adopt findings of fact and overriding considerations (if necessary), and adopt a mitigation monitoring and reporting program. In Fresno County, the County Planning Commission is the approval authority for the two CUPs, SMRP, and the associated Financial Assurance Mechanism (FAM). The FAM is necessary to ensure that the County has adequate funds on hand to ensure that reclamation can be completed as defined in the SMRP. These approvals are appealable to the County Board of Supervisors.

2.7 OTHER AGENCIES WHOSE APPROVAL MAY BE REQUIRED

In addition to County approval, other permits and approvals would be required before the changes in operation at the project sites could proceed. The other agencies whose approval may be required include:

Federal Agencies

- U.S. Fish and Wildlife Service (incidental take statement)

State Agencies

- California Department of Conservation, Division of Mine Reclamation (SMARA reclamation plan review and release of FAM)
- California Department of Fish and Wildlife (lake or streambed alteration agreement; California Endangered Species Act permit)

Regional and Local Agencies

- Central Valley Regional Water Quality Control Board (Section 401 certification)
- San Joaquin Valley Air Pollution Control District (SJVAPCD) (Authority to Construct for new asphalt plant at Plant Site, new aggregate plant at Quarry Site, existing ready-mix concrete plant when relocated to Quarry Site, and existing asphalt plant when relocated to Quarry Site; portable air permit for portable recycle plant)

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3—TERMINOLOGY, APPROACH AND ASSUMPTIONS

This section provides an overview of the terminology and approach underlying the following topic-specific sections of this Draft EIR. Included in this section is an overview of the terminology used, organization of the sections, and the role of mitigation measures in reducing potential impacts.

3.1 TERMINOLOGY

To assist reviewers in understanding this Draft EIR, the following terms are defined:

- *Project* means the whole of an action that has the potential for resulting in a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.
- *Environment* means the physical conditions that exist in the area and that will be affected by a proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved is where significant direct or indirect impacts would occur as a result of the project. The environment includes both natural and human-made (artificial) conditions.
- *Impacts* analyzed under the California Environmental Quality Act (CEQA) must be related to a physical change. Impacts are:
  - direct or primary impacts that would be caused by a proposed project and would occur at the same time and place; or
  - indirect or secondary impacts that would be caused by a proposed project and would be later in time or farther removed in distance but would still be reasonably foreseeable. Indirect or secondary impacts may include growth-inducing impacts and other effects related to induced changes in the pattern of land use; population density or growth rate; and related effects on air and water and other natural systems, including ecosystems.
- *Significant impact on the environment* means a substantial, or potentially substantial, adverse change in any of the physical conditions in the area affected by a proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. An economic or social change by itself is not considered a significant impact on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.
- *Mitigation* consists of measures that avoid or substantially reduce a proposed project's significant environmental impacts by:

  - avoiding the impact altogether by not taking a certain action or parts of an action;
  - minimizing impacts by limiting the degree or magnitude of the action and its implementation;
  - rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
  - reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
  - compensating for the impact by replacing or providing substitute resources or environments.
- *Cumulative impacts* are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The following statements also apply when considering cumulative impacts:
  - The individual impacts may be changes resulting from a single project or separate projects.
  - The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over time.
- *Threshold of significance* is a criterion established by the lead agency to identify at what level an impact would be considered significant. A criterion is defined by a lead agency based on examples found in CEQA or the CEQA Guidelines, scientific and factual data relative to the lead agency jurisdiction, views of the public in affected areas, the policy/regulatory environment of affected jurisdictions, and other factors.

This EIR uses a variety of terms to describe the level of significance of adverse impacts. These terms are defined as follows:

- *No impact.* The project would have no direct or indirect effects on the environmental resource issue.
- *Less than significant*. An impact that is adverse but that does not exceed the defined thresholds of significance. Less than significant impacts do not require mitigation.
- *Potentially significant.* An impact that would be considered a significant impact as described above; however, the occurrence of the impact cannot be immediately determined with certainty. For CEQA purposes, a potentially significant impact

is treated in this EIR as if it were a significant impact and mitigation measures are recommended, when feasible, to avoid or reduce potentially significant impacts.

- *Significant*. An impact that exceeds the defined thresholds of significance that would or could cause a substantial adverse change in the environment. When available, mitigation measures are recommended to avoid the impact or reduce it to a less-than-significant level.
- *Significant and unavoidable*. An impact that exceeds the defined thresholds of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of feasible mitigation measures.

3.2 RESOURCE SECTION FORMAT

Each resource section follows the same format and includes the following primary subsections:

- The **"Environmental Setting"** subsections provide a description of existing baseline physical conditions on the project site and in the surroundings (e.g., existing land uses, noise environment, transportation conditions) at time of issuance of the NOP (with respect to each resource topic), with enough detail and breadth to allow a general understanding of the environmental impacts of the proposed project.
- The **"Regulatory Setting"** subsections identify the plans, policies, laws, regulations, and ordinances that are relevant to each resource subject. This subsection describes required permits and other approvals necessary to implement the project.
- The **"Significance Criteria and Analysis Methodology"** subsections list the significance criteria in the Environmental Checklist of Appendix G of the CEQA Guidelines that are used to determine whether an impact is significant. The "Analysis Methodology" for the impact analysis is also provided as relevant to each resource topic and explains the parameters, assumptions, and data used in the analysis.
- The **"Project Impacts and Mitigation Measures"** subsections describe the physical environmental impacts (i.e., the changes to baseline physical environmental conditions) that could result from implementation of the proposed project, as well as any mitigation measures that could avoid, eliminate, or reduce identified significant impacts.

  The project-level impact analysis for each topic begins with an impact statement that reflects one or more of the applicable significance criteria. Some significance

criteria may be combined in a single impact statement, if appropriate Each impact statement describes the impact that would occur without mitigation. Each impact statement is keyed to the section number under which each resource topic is analyzed (e.g., 4.1 for Aesthetics and Visual Resources) and an impact number (e.g., 1, 2, 3) for a combined numeric code (e.g., Impact 4.1-1, Impact 4.1-2, etc.).

When potentially significant impacts are identified, mitigation measures are presented that would avoid, eliminate, or reduce significant adverse impacts of the project. Each mitigation measure corresponds to the impact statement numeric code (e.g., Mitigation Measure 4.1-1 for a mitigation measure that corresponds to Impact 4.1-1). If there is more than one mitigation measure for the same impact statement, the mitigation measures are numbered with a lowercase letter suffix (e.g., Mitigation Measures 4.1-1a and 4.1-1b).

The approach to and analysis of cumulative impacts is provided in Chapter 5, "Cumulative Impacts," of this Draft EIR.

3.3 MITIGATION MEASURES

In most cases, implementation of recommended mitigation measures would either result in complete avoidance of impacts or reduce impacts to less than significant. However, if significant and unavoidable impacts are identified that would result with implementation of the project, these impacts cannot be reduced to a less-than-significant level after application of feasible mitigation measures and alternatives. As a condition of project approval, the applicant for the proposed project would be required to implement all of the mitigation measures identified in this Draft EIR and adopted by the County.

In accordance with PRC Section 21081.6(a), the County would adopt a mitigation monitoring and reporting program (MMRP) at the time it certifies the EIR. The purpose of the MMRP is to ensure that the applicant would comply with the adopted mitigation measures when the project is implemented. The MMRP would identify each of the mitigation measures and describe the party responsible for monitoring, the time frame for implementation, and the program for monitoring compliance.

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4—ENVIRONMENTAL ANALYSIS

Sections 4.1 through 4.20 of this chapter document the resource impact analyses conducted for the project. As discussed in Section 1.1, "Purpose of an Environmental Impact Report," located in Chapter 1, "Introduction," of this Draft EIR, the CEQA Guidelines require analysis of environmental impacts caused by a proposed project.

As an initial step in the environmental review process, issues identified in the Environmental Checklist of Appendix G of the CEQA Guidelines are usually considered in an initial study to determine whether the project would have the potential to result in significant impacts associated with each issue. However, the County of Fresno (County) has determined to forego an initial study in favor of addressing each resource topic in this Draft EIR. Sections 4.1 through 4.20 are based on the resource topics as listed in the CEQA Guidelines' Appendix G, "Environmental Checklist." These resource topics are:

- aesthetics,
- agricultural and forestry resources,
- air quality,
- biological resources,
- cultural resources,
- energy,
- geology and soils,
- greenhouse gas emissions,
- hazards and hazardous materials,
- hydrology and water quality,
- land use and planning,
- mineral resources,
- noise,
- population and housing,
- public services,
- recreation,
- transportation,
- tribal cultural resources,
- utilities and service systems, and
- wildfire.

The general methodologies used for analyzing project impacts for the resource analyses is discussed in Chapter 3, "Terminology, Approach and Assumptions," of this Draft EIR. Specific methodologies are discussed in each resource section.

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4.1—AESTHETICS AND VISUAL RESOURCES

This section of the Draft EIR describes the aesthetic and visual setting of the Plant Site and Quarry Site (herein together "project sites") as they exist today; presents the regulatory framework within which aesthetic and visual resources are evaluated; and analyzes the potential impacts to aesthetic and visual resources from the mining, processing, production, and reclamation activities of the proposed project. Mitigation measures to protect viewsheds are recommended, as appropriate, where visual impacts are determined to be potentially significant. Elements considered in this section include the degree of natural screening by vegetation and topography, relative size of features, and the length of time these features are in view.

The information in this section is based on an applicant-prepared visual impact analysis and publicly available sources. The applicant-prepared study used is:

- *Visual Impact Analysis.* CEMEX Rockfield Modification Project. Prepared by Sespe Consulting, Inc. (Sespe). March 2022. (Appendix C, "Visual Impact Analysis")

The *Visual Impact Analysis* was originally prepared by Sespe in November 2019. The analysis was peer reviewed by County-retained Benchmark Resources in April 2021 and January 2022, and in response the *Visual Impact Analysis* (Appendix C) was updated by Sespe in July 2021 and March 2022, respectively.

4.1.1 Environmental Setting

This section describes the existing environment and visual features in and around the Plant Site and Quarry Site.

4.1.1.1 Regional Setting and Topography

The Plant Site and Quarry Site are located in unincorporated Fresno County, north of the City of Fresno and south of the Town of Friant (shown on Figure 1-1, "Regional Location," and Figure 1-2, "Site Location," of Chapter 1, "Introduction," of this Draft EIR). The Quarry Site is located approximately 1.1 miles north of the Plant Site. Both project sites are bordered by North Friant Road to the east. The San Joaquin River runs adjacent to the western border of the Quarry Site and approximately 0.5 miles west of the Plant Site. The San Joaquin River makes up the boundary between Fresno and Madera Counties. Areas located to the west across the San Joaquin River are under the jurisdiction of Madera County.

The existing topography immediately surrounding the project sites is generally flat within the valley of the San Joaquin River. The San Joaquin River bluffs, approximately

200 feet in height, are located to the west of the project sites across the San Joaquin River, and river bluffs approximately 80 feet in height are located to the east across North Friant Road. Owens Mountain is located approximately 4.5 miles to the east of the project sites. Millerton Lake is located approximately 3.0 miles north of the Quarry Site.

4.1.1.2 Project Site Land Uses

Plant Site

Mining and processing operations have been located on the Plant Site since 1924. The existing land uses on the Plant Site consist of processing and production facilities, as shown on Figure 2-3, "Plant Site Existing Conditions," of Chapter 2, "Project Description," of this Draft EIR. Mining would occur during Phase 1 mining operations once the aggregate plant is removed. The Plant Site currently contains an aggregate plant (center of the site), ready-mix concrete plant (northwest portion of the site), and diesel-powered, portable recycle plant. The Plant Site also contains a ready-mix maintenance shop/office (near the site entrance), a scale house/office/quality control lab (near center of site), and an aggregate maintenance shop (center of the site). Various large stockpiles and perimeter berms are also found throughout the site.

The 138.5-acre Plant Site is relatively flat and slopes gently to the west; surface elevations range from 300 to 320 feet above mean sea level (msl). The entire Plant Site is disturbed by mining and processing operations with the exception of an approximately 4-acre area within the required 50-foot setback from North Friant Road. Approximately 98.5 acres of the Plant Site have been partially mined to depths of between 5 to 32 feet below ground surface (bgs) and backfilled; approximately 36 acres have been developed as silt ponds. The habitat assessment performed for the Plant Site indicates that 0.72 acres of land support a recognized plant community—riparian forest (see Appendix E-1, "Plant Site Habitat Assessment").

Quarry Site

The existing land uses on the Quarry Site consist of aggregate mining as shown on Figure 2-4, "Quarry Site Existing Conditions." Mining at the Quarry Site first occurred in 1913 and continued through the 1920s. Mining resumed again in the 1980s and has been ongoing for over 30 years. The existing Conditional Use Permits (CUPs) for the Quarry Site allow aggregate mining and transport of approximately 1.4 million tons of aggregate per year via an interplant haul on North Friant Road to the Plant Site for processing. The Quarry Site currently does not contain any processing or production facilities. Screening berms are located along North Friant Road and along the southwest boundary. Vegetated topsoil stockpiles are located in various locations along the western perimeter and

provide additional screening. Various internal haul roads run throughout the Quarry Site.

The 352.4-acre Quarry Site generally slopes to the south. Surface elevations range from approximately 250 to 330 feet msl. The majority of the Quarry Site (over 90 percent) has been partially disturbed by the current and historical mining operations. Undisturbed areas include the required 50-foot setback from North Friant Road and the required 200-foot setback from the San Joaquin River.

The habitat assessment performed for the Quarry Site stated that the only plant community observed within the boundaries of the Quarry Site were scattered patches of non-native annual grasslands, totaling approximately 47 acres (Appendix E-2, "Quarry Site Habitat Assessment"). This habitat occurs along the eastern boundary of the Quarry Site, near North Friant Road. Under the current CUPs these non-native grassland areas located outside of the 50-foot setback from North Friant Road are in the process of being mined or will be mined in the near future under existing mining operations. The Quarry Site also includes a number of isolated, mature, native Valley oak trees and mature, non-native Eucalyptus trees located along the western edge of the Quarry Site, adjacent to the San Joaquin River, that have been avoided under the existing mining operations. The removal of these trees is not planned to occur under existing mining operations.

4.1.1.3 Surrounding Land Uses

Both project sites are generally surrounded by rural residential properties, open spaces, wetlands, and agricultural lands, as shown on Figure 2-5, "Conditional Use Permits and Surrounding Land Uses." Open space and wetlands and public recreation areas associated with the San Joaquin River are adjacent to both project sites in various areas and include properties owned by the California Department of Fish and Wildlife (CDFW), the San Joaquin River Conservancy (SJRC), and the San Joaquin River Parkway and Conservation Trust (Parkway Trust). A public bicycle lane is located along North Friant Road.

The Sumner Hill residential development in Madera County is located west of the Quarry Site on the San Joaquin River bluffs overlooking the San Joaquin River and the Quarry Site. Sumner Hill is a private, gated residential community and does not allow public access. There are also large lot residences and private residential communities located to the east of the Plant Site and Quarry Site, along North Friant Road and Bluff View Avenue.

4.1.1.4 Identification of Potentially Sensitive Viewpoints

Public scenic vistas, nearby public roadways/scenic highways, and public parks/recreational facilities (both existing and proposed) that are located within the project viewshed are described below.

Scenic Vista

A "scenic vista" is defined as an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing. This includes any such areas designated by a federal, state, or local agency. There are no designated federal, state, or local scenic vistas in the viewsheds of the project sites. However, as described below in Section 4.1.3.2, "Analysis Methodology," visual resource ratings were developed using the U.S. Bureau of Land Management (BLM) Visual Resources Management System to quantify the scenic value of existing views from potentially sensitive existing publicly accessible viewpoints, potential future publicly accessible viewpoints, and viewpoints from surrounding private residential communities.

Scenic Highway

A "scenic highway" is defined as any stretch of public roadway that is designated as a scenic corridor by a federal, state, or local agency. Roadways located near the project sites include North Friant Road located immediately east of the project sites, State Route 41 located approximately 2.9 miles to the west, and State Route 145 located approximately 3.5 miles to the north. None of these roadways are designated as State Scenic Highways (California Department of Transportation [Caltrans] 2018). State Route 168, located approximately 7.1 miles southeast of the project sites is an "Eligible State Scenic Highway—Not Officially Designated." State Route 168 is, however, a "County-Designated Scenic Roadway" in the Open Space and Conservation Element of the *Fresno County General Plan* from Friant Kern Canal to Huntington Lake (Fresno County 2024). The project sites are not visible from State Route 168.

The portion of North Friant Road adjacent to both the Plant and Quarry sites is also a County-designated scenic highway (Fresno County 2024). Specifically, Fresno County has designated Friant Road from the City of Fresno to Lost Lake Road a County-designated scenic roadway as it "traverse[s] land with unique or outstanding scenic quality or provide[s] access to regionally significant scenic and recreational areas."

Public Parks/Recreational Facilities

Public recreation areas adjacent to the project sites consist of Lost Lake County Park, located adjacent to the northwest boundary of the Quarry Site, and the San Joaquin River, located west of the Plant Site and Quarry Site. In addition, the SJRC's (2018) *San Joaquin*

River Parkway Master Plan Update (Parkway Master Plan) describes existing resources and presents conceptual plans for acquired Parkway lands, and presents policies, guidelines, and best management practices (BMPs) for continued acquisitions, improvements, and management of approximately 5,900 acres on both sides of the San Joaquin River. The Parkway Master Plan indicates various proposed hiking trail alignments subject to acquiring land or easements from willing sellers. Similarly, the *Fresno County Regional Bicycle & Recreational Trails Master Plan* (Bicycle Master Plan) also envisions a system of connected trails along the San Joaquin River between the City of Fresno and the Town of Friant (Fresno County 2013). Consistent with the Parkway Master Plan and Bicycle Master Plan, trail easements are included in the mine and reclamation plans for the Plant Site and Quarry Site. The Plant Site trail easement is located along the eastern boundary of the Plant Site within the 50-foot setback from North Friant Road (shown on Figure 2-7, "Proposed Plant Site Mining Plan"). The Quarry Site trail easement is located along the western boundary of the Quarry Site within the 200-foot setback from the San Joaquin River (shown on Figures 2-8, "Proposed Quarry Site Mining Plan").

Private Viewpoints

The Sumner Hill residential development west of the San Joaquin River and within Madera County has views of the Quarry Site. Some large lot residences and private residential communities east of the project sites along North Friant Road and Bluff View Avenue have views of the Plant Site and Quarry Site.

4.1.2 Regulatory Setting

4.1.2.1 Federal

U.S. Bureau of Land Management

BLM has developed the Visual Resources Management System to objectively rate the quality of visual resources and evaluate changes in scenic quality attributed to a proposed change in land use. The project sites and surrounding areas are not located on federal lands subject to BLM jurisdiction; however, the County and other agencies have relied on this methodology because it provides a commonly accepted qualitative and quantitative approach for measuring visual impacts.

The Visual Resources Management System methodology is based on the BLM visual impact assessment procedures provided in the "Manual 8400—Visual Resource Management" (BLM 1984). The BLM system uses quantitative and qualitative methods to measure potential visual impacts. The methodology includes defining the project setting and viewshed, identifying sensitive view receptors for assessment, analyzing the baseline visual quality and character of the identified views, depicting the visual appearance of the project from the identified views, assessing the project's potential

impacts to those views in comparison to their baseline visual quality and character, and identifying methods to mitigate any potentially significant visual impacts.

"Visual quality" is a measure of a landscape or a view's visual and aesthetic appeal. While there are a number of standardized methods for rating visual quality, the "Scenic Quality Rating" method utilized by BLM allows the various landscape elements that comprise visual quality to be easily quantified and rated, while minimizing issues of ambiguity or subjectivity.

According to this method, visual quality is rated according to the presence and characteristics of seven key components of the landscape. These components include landform, vegetation, water, color, adjacent scenery, scarcity and cultural modifications.

1. The "landform" component of the visual quality rating criteria takes into account the fact that topography becomes more interesting visually as it gets steeper or more massive, or more severely or universally sculptured. Outstanding landforms may be monumental, (as found in Yosemite Valley), or they may be exceedingly artistic and subtle (such as certain badlands, pinnacles, arches, and other extraordinary formations).
2. The "vegetation" component of the rating criteria gives primary consideration to the variety of patterns, forms, and textures created by plant life. Short-lived displays are given consideration when they are known to be recurring or spectacular. Consideration is also given to smaller scale vegetational features that add striking and intriguing detail elements to the landscape (e.g., gnarled or wind-beaten trees, Joshua trees, etc.).
3. The "water" component of the rating criteria recognizes that visual quality is largely tied to the presence of water in scenery, as it is that ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score for the water component.
4. The "color" component of the visual quality rating criteria considers the overall color(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.). Key factors that are used when rating the color of scenery are variety, contrast, and harmony.
5. The "adjacent scenery" component of the rating criteria takes into account the degree to which scenery outside the view being rated enhances the overall impression of the scenery under evaluation. The distance of influence for adjacent scenery normally ranges from 0 to 5 miles, depending upon the characteristics of the topography, the vegetation cover, and other such factors. This factor is generally applied to views that would normally rate very low in score, but the

influence of the adjacent high visual quality would enhance the visual quality and raise the score.

6. The "scarcity" component of the visual quality rating criteria provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique or rare within a region. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often, it is a number of not so spectacular elements in the proper combination that produces the most pleasing and memorable scenery – the scarcity factor can be used to recognize this type of area and give it the added emphasis it should have.
7. The "cultural modifications" component of the visual quality rating criteria takes into account any man-made modifications to the landform, water, vegetation, and/or the addition of man-made structures. Depending on their character, these cultural modifications may detract from the scenery in the form of a negative intrusion, or they may complement and improve the scenic quality of a view.

Per BLM guidelines, in the visual resource inventory process public lands are given an A, B, or C rating based on the apparent scenic quality which is determined using the seven key factors described above. During the rating process, each of these key factors are ranked on a comparative basis with similar features within the physiographic province. Table 4.1-1, "U.S. Bureau of Land Management Visual Quality Inventory and Evaluation Chart," displays the point values associated with the seven key factors. Based on this point system, a score of 19 or more receives an A-rating, a score between 12 and 18 receives a B-rating, and a score of 11 or less receives a C-rating.

Table 4.1-1
U.S. Bureau of Land Management Visual Quality Inventory and Evaluation Chart

Key Factors	Rating Criteria and Score		
Landform	High vertical relief as expressed in prominent cliffs, spires, or massive rock outcrops, or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers. **Score 5**	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detailed features which are interesting though not dominant or exceptional. **Score 3**	Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features. **Score 1**

Key Factors	Rating Criteria and Score		
Vegetation	A variety of vegetative types as expressed in interesting forms, textures, and patterns. **Score 5**	Some variety of vegetation, but only one or two major types. **Score 3**	Little or no variety or contrast in vegetation. **Score 1**
Water	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape. **Score 5**	Flowing, or still, but not dominant in the landscape. **Score 3**	Absent, or present, but not noticeable. **Score 0**
Color	Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water or snow fields. **Score 5**	Some intensity or variety in colors and contrast of the soil, rock and vegetation, but not a dominant scenic element. **Score 3**	Subtle color variations, contrast, or interest; generally mute tones. **Score 1**
Influence of Adjacent Scenery	Adjacent scenery greatly enhances visual quality. **Score 5**	Adjacent scenery moderately enhances overall visual quality. S**core 3**	Adjacent scenery has little or no influence on overall visual quality. **Score 0**
Scarcity	One of a kind; or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc. **Score 5+** [a]	Distinctive, though somewhat similar to others within the region. **Score 3**	Interesting within its setting, but fairly common within the region. **Score 1**
Cultural Modifications	Modifications add favorably to visual variety while promoting visual harmony. **Score 2**	Modifications add little or no visual variety to the area and introduce no discordant elements. **Score 0**	Modifications add variety but are very discordant and promote strong disharmony. **Score -4**

Table Source: U.S. Bureau of Land Management (BLM) 1984.
Table Notes:
a. A rating of greater than 5+ can be given but must be supported by written justification.

An important premise of the Visual Resources Management evaluation method is that views with the most variety and most harmonious composition have the greatest scenic value. Another important concept is that man-made features within a landscape do not necessarily detract from the scenic value. In fact, certain man-made features which complement the natural landscape may actually enhance overall visual quality. As such, in making a determination it is important to assess the project's effect relative to the "visual character" of the project setting.

Generally speaking, projects that create a high level of contrast to the existing visual character of a project setting are more likely to generate adverse impacts due to visual incompatibility. Conversely, projects that create a low level of contrast to the existing visual character are less likely to generate adverse impacts due to inherent visual compatibility. On this basis, project modifications are quantified and evaluated for impact assessment purposes. By comparing the difference in visual quality ratings from the baseline (i.e., "before" condition) to the post-project (i.e., "after" condition) visual conditions, the severity of project related visual impacts can be quantified. It is important to note that, per BLM guidance, in some cases visual changes caused by the project may actually have a beneficial visual effect and overall enhance scenic quality of an area.

4.1.2.2 State

California Scenic Highway Program

The State of California officially designates state scenic highways through the "California Scenic Highway Program," which is managed by the California Department of Transportation (Caltrans) (Caltrans 2008). A highway may be designated "scenic" depending on how much of the natural landscape can be seen by travelers, the scenic quality of the surrounding landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. Highways may also be identified as "candidate" scenic highways, pending official designation. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code (SHC) Section 260 et. seq. As described in the "Scenic Highway" subsection above, the project sites are not visible from any designated or candidate scenic highways.

4.1.2.3 Local

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2000) Agricultural and Land Use Element and Open Space and Conservation Element include policies related to conservation of visual resources as well as sand and gravel (i.e., aggregate) resources within County lands. *Fresno County General Plan* policies that apply to the proposed project are listed below.

Agriculture and Land Use Element

Section C. River Influence Areas

Goal LU-C: To preserve and enhance the value of the river environment as a multiple use, open space resource; maintain the environmental and aesthetic qualities of the area; protect the quality and quantity of the surface and groundwater resources; provide for long term preservation of productive

agricultural land; conserve and enhance natural wildlife habitat; and maintain the flood-carrying capacity of the channel at a level equal to the one (1) percent flood event (100-year flood).

Policy LU-C.2: Within the San Joaquin River Corridor Overlay, the County shall accommodate agricultural activities with incidental homesites, recreational uses, sand and gravel extraction, and wildlife habitat and open space areas.

Policy LU-C.6: The County may allow the extraction of rock, sand, and gravel resources along the San Joaquin River consistent with the Minerals Resources section policies of the Open Space and Conservation Element.

Open Space and Conservation Element

Section C. Mineral Resources

Goal OS-C: To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.

Policy OS-C.4: The County shall impose conditions as necessary to minimize or eliminate the potential adverse impact of mining operations on surrounding properties.

Policy OS-C.7: The County shall require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.

Policy OS-C.8: The County shall, where feasible along the San Joaquin River, site recreational trails, bikeways, and other recreation areas at least three hundred (300) feet from the edge of active aggregate mining operations and separate them by physical barriers. Recreational trail/bikeway crossings of active haul routes should be avoided whenever possible; if crossings of haul routes are necessary, separate where feasible.

Section K. Scenic Resources

Goal OS-K: To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.

Policy OS-K.1: The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.

Policy OS-K.2: The County shall maintain an inventory and map of scenic resources within the County.

Policy OS-K.4: The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.

Section L. Scenic Roadways

Goal OS-L: To conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in Fresno County.

Policy OS-L.1: The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways.

Policy OS-L.4: The County shall require proposed new development along designated scenic roadways within urban areas and unincorporated communities to underground utility lines on and adjacent to the site of proposed development or, when this is infeasible, to contribute their fair share of funding for future undergrounding.

Madera County—General Plan Policies and Guidelines

Although the project sites are located completely within, and are under the jurisdiction of, Fresno County, Madera County is located across the San Joaquin River to the west of the project sites (see Figure 1-2). The *Madera County General Plan* (Madera County 1995) Land Use (Section 1) and Agricultural and Natural Resources (Section 5) Elements have a number of policies related to scenic and visual resources. Madera County General Plan visual policies are listed below.

Land Use Element (Section 1)

Sub-Section H. Visual and Scenic Resources

Goal 1.H: To protect the visual and scenic resources of Madera County as important quality-of-life amenities for county residents and a principal asset in the promotion of recreation and tourism.

Policy 1.H.1: The County shall require that new development in scenic rural areas is planned and designed to avoid locating structures along ridgelines,

on steep slopes, or in other highly-visible locations, except under the following conditions:

a) Such a location is necessary to avoid hazards; or
b) The proposed construction will incorporate design and screening measures to minimize the visibility of structures and graded areas.

Sub-Section I. Scenic Routes

Goal 1.I: To develop a system of scenic routes serving the needs of residents and visitors to Madera County and to preserve, enhance, and protect the scenic resources visible from these scenic routes.

Policy 1.I.3: The County shall protect and enhance scenic corridors through such means as design review, sign control, underground utilities, scenic setbacks, density limitations, planned unit developments, grading and tree removal standards, open space easements, and land conservation contracts.

Agricultural and Natural Resources Element (Section 5)

Sub-Section I. Mineral Resources

Goal 5.I: To encourage commercial mining operations within areas designated for such extraction, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated, and to provide for the timely rehabilitation and appropriate reuse of mining sites.

Policy 5.I.1: The County shall require new mining operations to be designed to provide a buffer between existing or likely adjacent uses, minimize incompatibility with nearby uses, and adequately mitigate their environmental and aesthetic impacts. The buffer area shall be zoned Agricultural, Rural, Exclusive-20 Acre or -40 Acre (ARE-20 and ARE-40)

Policy 5.I.5: The County shall coordinate its mineral extraction policies and regulations with Fresno County, the City of Fresno, and Merced County. The County shall refer applications for mining operations in locations near or adjacent to a city or another county to the affected city or county for review and comment.

Policy 5.I.6: The County shall require that all mining operations prepare and implement mining plans and reclamation plans that mitigate environmental impacts and incorporate adequate security to guarantee proposed reclamation.

Zoning Ordinance of Fresno County—Land Use and Planning

The Zoning Ordinance of Fresno County—Land Use and Planning, last amended June 2018, has policies and ordinances related to visual and aesthetic resources. Specifically, Section 858, "Regulations for Surface Mining and Reclamation in All Districts," contains the following countywide development standards that potentially apply to visual resources and impacts associated with mining projects in the County.

Section 858—Regulations for Surface Mining and Reclamation in All Districts

H. Mining and Reclamation Standards

The standards for surface mining operations and reclamation shall be as follows:

1. No extraction of material or overburden shall be permitted within twenty-five (25) feet of any property boundary nor within fifty (50) feet of a boundary contiguous with a public road right-of-way or recorded residential subdivision.
2. No stockpiled soil or material shall be placed closer than twenty-five (25) feet from a property boundary.
4. Security fencing four (4) feet in height consisting of not less than three (3) strands of barbed wire, or an approved equivalent, shall be placed along any property line abutting a public right-of-way and around any extraction area where slopes steeper than two (2) feet horizontal to one (1) foot vertical are maintained. Such interior fencing will not be required where exterior fencing surrounds the property.
5. Screening of the site shall be achieved by planting trees of a variety approved by the Director along all property lines adjacent to a public road right-of-way or a recorded residential subdivision. Adequate screening can generally be achieved with evergreen trees planted in two (2) staggered rows, with twenty (20) feet between the rows and between the trees in each row. As an alternative, oleanders or shrubs of a similar size and density may be planted in the same pattern at ten (10) foot intervals. The plant species and planting plan and timetable shall be designated in the Mining and Reclamation Plan. All required plants shall be maintained in a good horticultural manner. In areas where it is found that the planting of trees or shrubs will not achieve the desired screening effect due to soil conditions, the Director may approve an alternate method of screening consisting of meandering dirt berms of sufficient height to screen the site. (Amended by Ord. T-252 adopted 12-9-80)
7. Where an access road intersects a County maintained road, it shall be improved with a driveway approach constructed to Fresno County Standards.

20. Good operating practices shall at all times be utilized to minimize noise, vibration, dust and unsightliness. In reviewing a proposal, the Planning Commission shall consider:
    a) The location of the processing plant.
    b) The location where unused equipment will be stored.
    c) Proposals for the removal of all structures, metallic equipment, debris, or objects upon conclusion of the extraction operations.
21. Any night lighting established on the property shall be arranged and controlled so as not to illuminate public rights-of-way or adjacent properties.

4.1.3 Significance Criteria and Analysis Methodology

4.1.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to aesthetics if it would:

a) have a substantial adverse effect on a scenic vista;
b) substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
c) in nonurbanized areas, substantially degrade the existing visual character or quality of public views (i.e., views experienced from publicly accessible vantage points) of the site and its surroundings; or
d) create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.1.3.2 Analysis Methodology

Site Reconnaissance

To quantify the visual and aesthetic impacts resulting from the proposed project, numerous viewsheds were mapped and photographed in the field by Sespe staff on January 22, 2018. Subsequent photos of the existing project sites were also taken by the applicant's staff in June 2019 and October 2020. On the days photos were taken, the atmospheric conditions were clear, calm, and sunny, and therefore represent conditions under which the highest level of potential project visibility would occur.

The chosen viewsheds were established by identifying the surrounding public areas within an approximately 3-miles radius from the project perimeter that would have a potentially unobstructed or partial line-of-sight view of the Plant Site or Quarry Site. The public areas surrounding the project sites are mostly flat with existing tall vegetation and topography that generally obscures views of the project sites from most distant

viewpoints. For this reason, the public viewshed is generally limited to the publicly accessible areas located adjacent to the perimeters of the project sites.

Additional viewsheds were established by identifying surrounding private communities with potentially unobstructed or partial line-of-sight view of the Plant Site or Quarry Site. Although analysis from private viewpoints is not explicitly required by CEQA, for the purpose of full disclosure, views from two of the communities along the bluffs east and west of the Quarry Site were also evaluated and the results are included in this Draft EIR. Only viewsheds near the Quarry Site were identified for further analysis because the proposed Quarry Site mining operations would occur for a period of 100 years, versus only 30 years at the Plant Site. In addition, there are private residential communities with multiple homes in close proximity to the Quarry Site, whereas the Plant Site is surrounded by large lot single family residences, and therefore is visible to fewer people. Furthermore, the depth of mining proposed at the Plant Site is 85 feet below the ground surface, would disturb only the alluvium, and would not involve benching. Because the entire Plant Site has already been disturbed by mining of the alluvium, and because the proposed mining would not create linear and engineered benches, the Plant Site quarry pit would be generally consistent with existing conditions. Lastly, the Plant Site contains office, processing, production, and other mining-related facilities. The primary change proposed at the Plant Site during mining operations is the replacement of an old asphalt plant with a new asphalt plant, and therefore, only minor visual changes related to processing and production facilities would occur at the Plant Site.

Potentially Sensitive Viewpoint Locations

Table 4.1-2, "Summary of Potentially Sensitive Viewpoint Locations," identifies the viewpoint locations selected for analysis, and Figure 4.1-1, "Potentially Sensitive Viewpoint Locations," displays the location of these viewpoints in relation to the project sites.

Table 4.1-2
Summary of Potentially Sensitive Viewpoint Locations

Map Reference	Location	Approximate Distance from Project Sites	Description
#1	Quarry Site—San Joaquin River	300-feet to the west	This viewpoint is located from the San Joaquin River water surface, west of the Quarry Site. This viewpoint also represents potential views of a potential future trail easement proposed along the western boundary of the Quarry Site.

Map Reference	Location	Approximate Distance from Project Sites	Description
#2	Quarry Site—Lost Lake Public Recreation Area	380-feet to the north	This viewpoint is located within the Lost Lake Regional Park, north/northwest of the Quarry Site. This public park is under ownership of Fresno County.
#3	Quarry Site—Along North Friant Road	200-feet to the east	This viewpoint is located at the Quarry Site entrance, along North Friant Road and the bicycle lane.
#4	Quarry Site—Along North Friant Road	375-feet to the northeast	This viewpoint is located northeast of the north corner of the Quarry Site, along North Friant Road and the bicycle lane.
#5	Quarry Site—Ledger Island Area	900-feet to the southwest	This viewpoint is located on the east bank of Ledger Island, west of the southern portion of the Quarry Site. This area is under ownership of the SJRC and is not currently accessible to the public. This viewpoint also represents potential views of a potential future trail easement proposed along the western boundary of the Quarry Site.
#6	Plant Site—Along North Friant Road	450-feet to the northeast	This viewpoint is located northeast of the Plant Site, along North Friant Road and the bicycle lane.
#7	Plant Site—Along North Friant Road	230-feet to the east	This viewpoint is located at the Plant Site entrance, along North Friant Road and the bicycle lane. This viewpoint also represents potential views of a potential future trail easement proposed along the eastern boundary of the Plant Site, adjacent to North Friant Road.
#8	Plant Site—Ball Ranch Area	250-feet to the northwest	This viewpoint is located within the Ball Ranch area northwest of the Plant Site. This area is under ownership of the SJRC and is not currently accessible to the public.
#9	Plant Site—Willow Unit Area	350-feet to the west	This viewpoint is located within the Willow Unit area west of the Plant Site. This area is under ownership of the California Department of Fish and Wildlife and is not currently accessible to the public.

Map Reference	Location	Approximate Distance from Project Sites	Description
#10	Quarry Site—Private Residence Along North Friant Road	1,110-feet to the northeast	This viewpoint represents the view from a private residence, northeast of the Quarry Site along North Friant Road.
#11	Quarry Site—Private Residence Along Bluff View Avenue	700-feet to the east	This viewpoint represents the view from a private residence, east of the Quarry Site along Bluff View Avenue.
#12	Quarry Site—Private Residence Sumner Hill Community	1,680-feet to thewest	This viewpoint represents the view from the private residential community of Sumner Hill, west of the Quarry Site along Killarney Drive. This viewpoint also represents potential views of a potential future trail easement proposed along the western boundary of the Quarry Site.
#13	Quarry Site—Private Residence SumnerHill Community	2,260-feet to thewest	This viewpoint represents the view from the private residential community of Sumner Hill, west of the Quarry Site at the end of Croom Place. This viewpoint also represents potentialviews of a potential future trail easement proposed along the western boundary of the Quarry Site.

Table Source: Sespe 2022
Table Notes: Figure 4.1-1 displays the location of these viewpoints in relation to the project sites.

The following figures show photographs of the existing views from the selected locations and also shows simulations of the proposed conditions from these locations during proposed Stage 1 and Stage 2 operations and after the completion of the proposed reclamation:

- Figure 4.1-2, "Quarry Site Public Viewpoint—Location #1,"
- Figure 4.1-3, "Quarry Site Public Viewpoint—Location #2,"
- Figure 4.1-4, "Quarry Site Public Viewpoint—Location #3,"
- Figure 4.1-5, "Quarry Site Public Viewpoint—Location #4,"
- Figure 4.1-6, "Quarry Site Public Viewpoint—Location #5,"
- Figure 4.1-7, "Plant Site Public Viewpoint—Location #6,"
- Figure 4.1-8, "Plant Site Public Viewpoint—Location #7,"

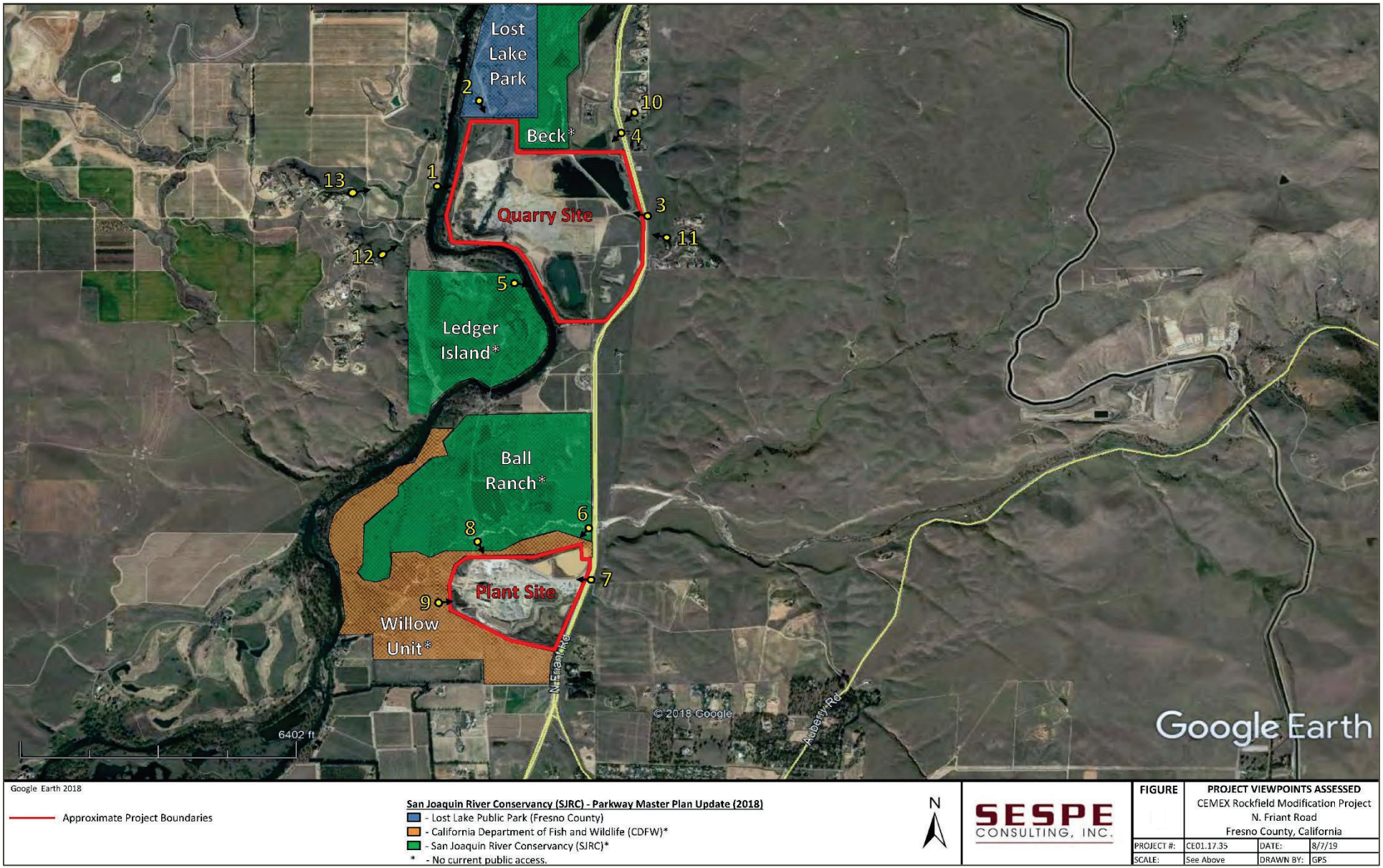
- Figure 4.1-9, "Plant Site Public Viewpoint—Location #8,"
- Figure 4.1-10, "Plant Site Public Viewpoint—Location #9,"
- Figure 4.1-11, "Quarry Site Private Viewpoint—Location #10 (with and without Mitigation),"
- Figure 4.1-12, "Quarry Site Private Viewpoint—Location #11 (with and without Mitigation),"
- Figure 4.1-13, "Quarry Site Private Viewpoint—Location #12,"
- Figure 4.1-14, "Quarry Site Private Viewpoint—Location #13,"
- Figure 4.1-15, "Quarry Site Private Viewpoint—Location #12 (with Mitigation)," and
- Figure 4.1-16, "Quarry Site Private Viewpoint—Location #13 (with Mitigation)."

Rating Visual Quality

As described in Section 4.1.2, BLM has developed the Visual Resources Management System to objectively rate the quality of visual resources and evaluate changes in scenic quality attributed to a proposed change in land use, in this case development and modification of mining on both the Plant Site and Quarry Site. The Visual Resources Management System was used in the *Visual Impact Analysis* (Appendix C) to rate visual impacts resulting from the proposed project at the 13 potentially sensitive viewpoints.

The BLM system uses quantitative and qualitative methods to measure potential visual impacts. According to this method, visual quality is rated according to the presence and characteristics of seven key components of the landscape, as summarized above in Table 4.1-1. Per BLM guidelines, in the visual resource inventory process lands are given an A, B, or C rating based on the apparent scenic quality which is determined using the seven key factors described above. During the rating process, each of these key factors are ranked on a comparative basis with similar features within the physiographic province. Based on this point system, a score of 19 or more receives an A rating, a score between 12 and 18 receives a B rating, and a score of 11 or less receives a C rating.

By comparing the difference in visual quality ratings from the baseline ("before" condition) to post-project ("after" condition) visual conditions, the severity of project related visual impacts can be quantified. However, in some cases, visual changes caused by projects may actually have a beneficial visual effect and may enhance scenic quality if project views improve when compared to baseline conditions. Although the project sites and surrounding lands are not within the jurisdiction of the BLM, use of the Visual Resources Management is considered appropriate as it allows visual resources and impacts to be quantified.



SOURCE: Sespe Consulting, Inc. 2022

NOTES: Table 4.1-3 summarizes the project impact ratings from each viewpoint.

Potentially Sensitive Viewpoint Locations
ROCKFIELD MODIFICATION PROJECT
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Figure 4.1-1

BENCHMARK RESOURCES

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Key Factors	Ratings Score
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adjacent Scenery	2
Scarcity	3
Cultural Modifications	0
TOTAL	18

Existing/Baseline View

Key Factors	Ratings Score
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adjacent Scenery	2
Scarcity	3
Cultural Modifications	0
TOTAL	18

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adjacent Scenery	2
Scarcity	3
Cultural Modifications	0
TOTAL	18

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adjacent Scenery	2
Scarcity	3
Cultural Modifications	+1
TOTAL	19

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Public Viewpoint—Location #1

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-2

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Key	Ratings Score
Landform	1
Vegetation	2
Water	0
Color	2
Influence of Adjacent Scenery	3
Scarcity	1
Cultural Modifications	1
TOTAL	10

Existing/Baseline View

Key	Ratings Score
Landform	1
Vegetation	2
Water	0
Color	2
Influence of Adjacent Scenery	3
Scarcity	1
Cultural Modifications	0
TOTAL	9

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	2
Water	0
Color	2
Influence of Adjacent Scenery	3
Scarcity	1
Cultural Modifications	0
TOTAL	9

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	3
Water	0
Color	2
Influence of Adjacent Scenery	3
Scarcity	1
Cultural Modifications	1
TOTAL	11

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Public Viewpoint—Location #2

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-3

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Key	Ratings Score
Landform	2
Vegetation	3
Water	1
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	0
TOTAL	12

Existing/Baseline View

Key	Ratings Score
Landform	1
Vegetation	4
Water	1
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-1
TOTAL	11

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	4
Water	1
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-1
TOTAL	11

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	4
Water	1
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	0
TOTAL	12

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Public Viewpoint—Location #3

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-4

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Key	Ratings Score
Landform	2
Vegetation	3
Water	0
Color	2
Influence of Adjacent Scenery	1
Scarcity	1
Cultural Modifications	0
TOTAL	9

Existing/Baseline View

Key	Ratings Score
Landform	2
Vegetation	3
Water	0
Color	1
Influence of Adjacent Scenery	1
Scarcity	1
Cultural Modifications	0
TOTAL	8

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	3
Water	0
Color	1
Influence of Adjacent Scenery	1
Scarcity	1
Cultural Modifications	-1
TOTAL	7

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	3
Water	0
Color	2
Influence of Adjacent Scenery	1
Scarcity	2
Cultural Modifications	1
TOTAL	11

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Public Viewpoint—Location #4

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-5

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Key	Ratings Score
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adjacent Scenery	2
Scarcity	3
Cultural Modifications	0
TOTAL	18

Existing/Baseline View

Key	Ratings Score
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adjacent Scenery	2
Scarcity	3
Cultural Modifications	0
TOTAL	18

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adjacent Scenery	2
Scarcity	3
Cultural Modifications	0
TOTAL	18

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	4
Water	4
Color	3
Influence of Adjacent Scenery	2
Scarcity	3
Cultural Modifications	0
TOTAL	18

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Public Viewpoint—Location #5

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-6

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Key	Ratings Score
Landform	1
Vegetation	2
Water	0
Color	2
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-1
TOTAL	7

Existing/Baseline View

Key	Ratings Score
Landform	1
Vegetation	2
Water	0
Color	2
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-1
TOTAL	7

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	3
Water	0
Color	3
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	0
TOTAL	10

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	3
Water	0
Color	3
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	1
TOTAL	11

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Plant Site Public Viewpoint—Location #6

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-7

BENCHMARK RESOURCES

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Key	Ratings Score
Landform	0
Vegetation	1
Water	0
Color	1
Influence of Adjacent Scenery	1
Scarcity	1
Cultural Modifications	-2
TOTAL	2

Existing/Baseline View

Key	Ratings Score
Landform	0
Vegetation	1
Water	0
Color	1
Influence of Adjacent Scenery	1
Scarcity	1
Cultural Modifications	-2
TOTAL	2

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	2
Water	0
Color	2
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-1
TOTAL	7

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	2
Water	0
Color	2
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	0
TOTAL	8

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Plant Site Public Viewpoint—Location #7

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-8

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Key	Ratings Score
Landform	1
Vegetation	1
Water	0
Color	1
Influence of Adjacent Scenery	1
Scarcity	1
Cultural Modifications	-4
TOTAL	1

Existing/Baseline View

Key	Ratings Score
Landform	1
Vegetation	1
Water	0
Color	1
Influence of Adjacent Scenery	1
Scarcity	1
Cultural Modifications	-4
TOTAL	1

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	1
Water	0
Color	2
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-1
TOTAL	6

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	2
Water	0
Color	3
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	0
TOTAL	10

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Plant Site Public Viewpoint—Location #8

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-9

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Key	Ratings Score
Landform	2
Vegetation	3
Water	0
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-2
TOTAL	9

Existing/Baseline View

Key	Ratings Score
Landform	2
Vegetation	3
Water	0
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-2
TOTAL	9

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	3
Water	0
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-1
TOTAL	10

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	3
Water	0
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	0
TOTAL	10

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Plant Site Public Viewpoint—Location #9

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-10

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Key	Ratings Score
Landform	2
Vegetation	3
Water	2
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-1
TOTAL	12

Existing/Baseline View

Key	Ratings Score
Landform	2
Vegetation	3
Water	2
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-2
TOTAL	11

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	3
Water	2
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-3
TOTAL	10

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	3
Water	2
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	0
TOTAL	13

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2021

NOTES:

1. The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.
2. The proposed mitigation of staining the quarry high walls with earth tone rock-staining product would not be visible from this viewpoint.

Quarry Site Private Viewpoint—Location #10 (with and without Mitigation)

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-11

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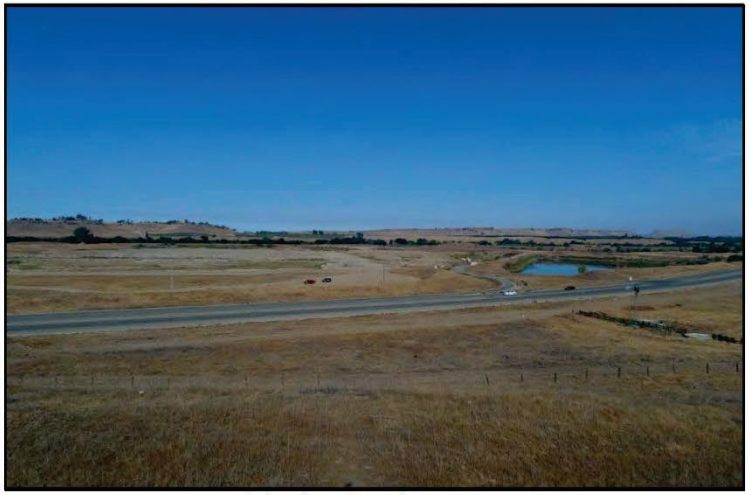
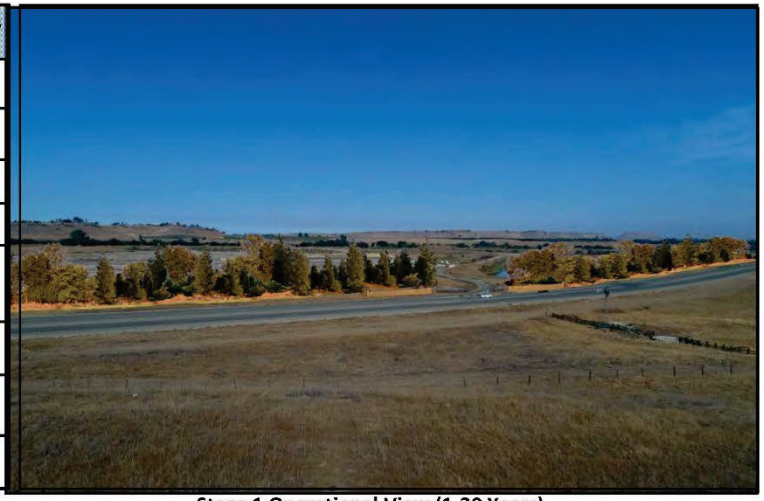
Key	Ratings Score
Landform	1
Vegetation	2
Water	1
Color	1
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-2
TOTAL	7



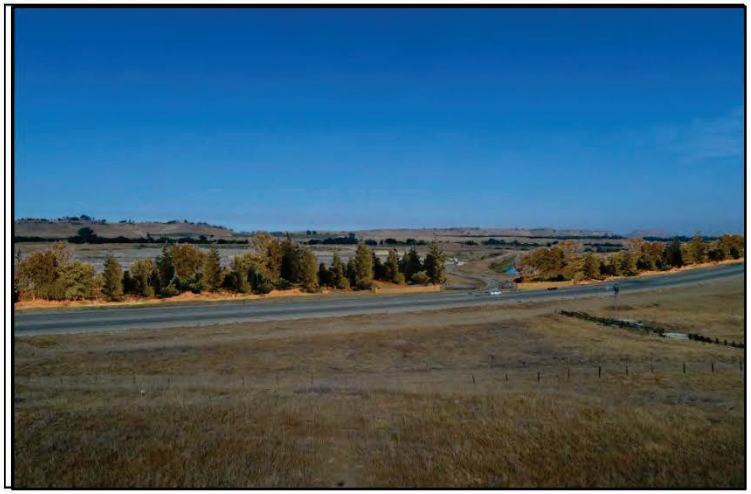
Existing/Baseline View

Key	Ratings Score
Landform	1
Vegetation	3
Water	1
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-3
TOTAL	8



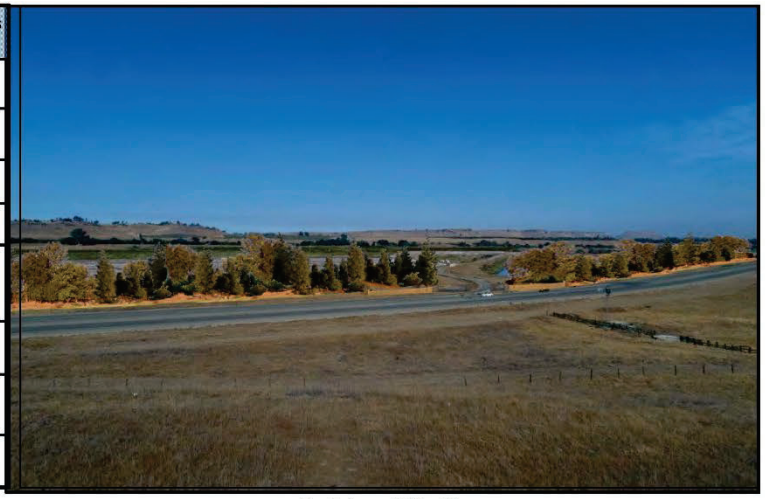
Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	3
Water	1
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-3
TOTAL	8



Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	4
Water	1
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-3
TOTAL	9



Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2021

NOTES:

1. The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.
2. The proposed mitigation of staining the quarry high walls with earth tone rock-staining product would not be visible from this viewpoint.

Quarry Site Private Viewpoint—Location #11 (with and without Mitigation)

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-12

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Key	Ratings Score
Landform	3
Vegetation	3
Water	3
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-2
TOTAL	13

Existing/Baseline View

Key	Ratings Score
Landform	3
Vegetation	3
Water	3
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-3
TOTAL	12

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	3
Vegetation	2
Water	3
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-3
TOTAL	11

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	3
Vegetation	2
Water	3
Color	1
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-4
TOTAL	9

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2021; ratings scores modified by Benchmark Resources 2022.

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Private Viewpoint—Location #12

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-13

BENCHMARK RESOURCES

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Key	Ratings Score
Landform	2
Vegetation	2
Water	2
Color	1
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-1
TOTAL	9

Existing/Baseline View

Key	Ratings Score
Landform	2
Vegetation	2
Water	2
Color	1
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-2
TOTAL	8

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	1
Water	2
Color	1
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-4
TOTAL	5

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	1
Vegetation	1
Water	2
Color	0
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-4
TOTAL	3

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2021; ratings scores modified by Benchmark Resources 2022

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Private Viewpoint—Location #13

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-14

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Key	Ratings Score
Landform	3
Vegetation	3
Water	3
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-2
TOTAL	13

Existing/Baseline View

Key	Ratings Score
Landform	3
Vegetation	3
Water	3
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-3
TOTAL	12

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	3
Vegetation	2
Water	3
Color	1
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-4
TOTAL	9

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	3
Vegetation	2
Water	3
Color	2
Influence of Adjacent Scenery	2
Scarcity	2
Cultural Modifications	-4
TOTAL	10

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022; ratings scores modified by Benchmark Resources 2022.

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Private Viewpoint—Location #12 (with Mitigation)

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-15

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Key	Ratings Score
Landform	2
Vegetation	2
Water	2
Color	1
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-1
TOTAL	9

Existing/Baseline View

Key	Ratings Score
Landform	2
Vegetation	2
Water	2
Color	1
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-2
TOTAL	8

Stage 1 Operational View (1-30 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	1
Water	2
Color	0
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-4
TOTAL	4

Stage 2 Operational View (31-100 Years)

Key Factors	Ratings Score
Landform	2
Vegetation	1
Water	2
Color	2
Influence of Adjacent Scenery	2
Scarcity	1
Cultural Modifications	-4
TOTAL	6

Reclaimed Site View

SOURCE: Sespe Consulting, Inc. 2022; ratings scores modified by Benchmark Resources 2022.

NOTES: The rating system/scores shown above are based on the U.S. Bureau of Land Management (BLM) Visual Resources Management (VRM) System.

Quarry Site Private Viewpoint—Location #13 (with Mitigation)

ROCKFIELD MODIFICATION PROJECT

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Figure 4.1-16

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Further, the County and other agencies have relied on this methodology when assessing visual impacts for other proposed projects. In the absence of adopted regulatory thresholds for evaluating the significance of project visual impacts, the following BLM designations are used in this analysis, to rank the significance of project impacts:

- **Potentially Significant Impact**: Any impact that could potentially lower the visual quality of an identified sensitive viewpoint by 3 points, or more, and for which no feasible or effective mitigation can be identified.
- **Less Than Significant Impact with Mitigation Incorporated**: Any impact that could potentially lower the visual quality of an identified sensitive viewpoint by 3 points or more, but can be reduced to less than 3 points with mitigation incorporated.
- **Less Than Significant Impact**: Any impact that could potentially lower the visual quality of an identified sensitive viewpoint by 2 point or less. In visual impact analysis, a less than significant impact usually occurs when a project's visual modifications can be seen but do not dominate, contrast with, or strongly degrade a sensitive viewpoint.
- **No Impact:** The project would not have an impact from an identified sensitive viewpoint. In visual impact analysis, there is no impact if the project's potential visual modifications cannot be seen from an identified sensitive viewpoint.

It should be noted that County-retained Benchmark Resources completed the peer review of the *Visual Impact Analysis* (Appendix C). As part of this review, the ratings scores were adjusted in the analysis below and were deemed appropriate based on Benchmark Resources' professional experience and judgement. The County then independently reviewed the analysis and concurred with the findings provided in this EIR.

4.1.4 Project Impacts and Mitigation Measures

Impact 4.1-1: Have a Substantial Adverse Effect on a Scenic Vista

There are no designated federal, state, or local scenic vistas in the viewsheds of the project sites. However, the Plant Site and Quarry Site are visible from publicly accessible areas, areas that may become publicly accessible during the lifetime of the proposed project, and from private residential communities surrounding the project sites. The continuation of mining would generate new stockpiles on the Plant Site and Quarry Site; would deepen the mining excavations on both sites to depths of approximately 85 feet bgs at the Plant Site and 600 feet bgs at the Quarry Site; and would add aggregate processing and production facilities to the Quarry Site. Each of these changes has the potential to adversely affect scenic vistas visible from potentially sensitive viewpoints.

As described in the *Visual Impact Analysis* (Appendix C), BLM's Visual Resources Management System was used to evaluate the potential of the proposed project to adversely affect the scenic quality of existing and potential future public views of the Plant and Quarry Sites from the potentially sensitive viewpoints summarized in Table 4.1-2 and shown on Figure 4.1-1. Figures 4.1-2 through 4.1-14 show the existing site views to the simulated views that would occur during Stages 1 and/or 2, as well as the post-project, reclamation period views. Each period was given an individual BLM rating criteria scores to determine the significance of visual impacts at each location. Table 4.1-3, "U.S. Bureau of Land Management Visual Project Impact Ratings at Nearby Viewpoints," displays the relevant BLM ratings criteria scores for each time period and at each location. As described in Section 4.1.3.2, a potentially significant impact would result if it were determined that the project could potentially lower the visual quality of an identified sensitive viewpoint by -3 points or more.

Plant Site Scenic Vistas

Visual quality is expected to remain the same during Stage 1 operations because almost the entire Plant Site is already disturbed by historic mining and existing processing operations and the proposed depth of mining of 85 feet bgs would not substantially alter the visual characteristics of the Plant Site (see visual simulations from Locations #6, #7, #8, and #9 in Figures 4.1-7 through 4.1-10 and Table 4.1-3). Furthermore, the proposed project would not bring new facilities to the Plant Site; instead, the existing hot-mix asphalt plant would be removed and replaced with a modern plant on the Quarry Site. Under the proposed project Stage 1 operations, the only undisturbed area on the Plant Site (4 acres consisting of a 50-foot setback from North Friant Road) would be maintained. Upon the completion of Stage 1 operations, the Plant Site would be reclaimed, which would result in a net improvement in the views of the Plant Site from Locations #6, #7, #8, and #9. This would occur due to the revegetation of the Plant Site and the removal of the existing processing plants (i.e., aggregate processing plant, ready-mix concrete plant, and hot-mix asphalt plant), which, under existing conditions, are clearly visible at the Plant Site from North Friant Road and bicycle lane. Thus, impacts to scenic vistas surrounding the Plant Site would be less than significant.

Table 4.1-3
U.S. Bureau of Land Management Visual Project Impact Ratings at Nearby Viewpoints

Map Reference	Location	Existing View Rating	Stage 1[a] View Rating	Stage 2[b] View Rating	Reclaimed View Rating[c]	Highest Ratings Change Due to Proposed Project	Potential Significance[d]
#1	Quarry Site—San Joaquin River	18	18	18	19	+1	Beneficial Impact
#2	Quarry Site—Lost Lake Public Recreation Area	10	9	9	11	-1	Less Than Significant Impact
#3	Quarry Site—Along North Friant Road	12	11	11	12	-1	Less Than Significant Impact
#4	Quarry Site—Along North Friant Road	9	8	7	11	-2	Less Than Significant Impact
#5	Quarry Site—Ledger Island Area	18	18	18	18	0	Beneficial Impact
#6	Plant Site—Along North Friant Road	7	7	10	11	+3	Beneficial Impact
#7	Plant Site—Along North Friant Road	2	2	7	8	+6	Beneficial Impact
#8	Plant Site—Ball Ranch Area	1	1	6	10	+9	Beneficial Impact
#9	Plant Site—Willow Unit Area	9	9	10	10	+1	Beneficial Impact
#10[e]	Quarry Site—Private Residence Along North Friant Road	12	11	10	13	-2	Less Than Significant Impact
#10[e]	*Quarry Site—Private Residence Along North Friant Road (with mitigation)[f,g]*	*12*	*11*	*10*	*13*	-2	*Less Than Significant Impact*
#11[e]	Quarry Site—Private Residence Along Bluff View Avenue	7	8	8	9	+2	Beneficial Impact
#11[e]	*Quarry Site—Private Residence Along Bluff View Avenue (with Mitigation)[f,g]*	*7*	*8*	*8*	*9*	+2	*Beneficial Impact*
#12[e]	Quarry Site—Private Residence SumnerHill Community	13	12	10	9	-4	**Potentially Significant Impact**
#12[e]	*Quarry Site—Private Residence SumnerHill Community (with Mitigation)[f,h]*	*13*	*12*	*9*	*10*	-4	***Potentially Significant Impact with Mitigation***

Map Reference	Location	Existing View Rating	Stage 1[a] View Rating	Stage 2[b] View Rating	Reclaimed View Rating[c]	Highest Ratings Change Due to Proposed Project	Potential Significance[d]
#13 [e]	Quarry Site—Private Residence SumnerHill Community	9	8	5	3	-6	**Potentially Significant Impact**
#13 [e]	*Quarry Site—Private Residence SumnerHill Community (with Mitigation)*[f,h]	*9*	*8*	*4*	*6*	*-5*	***Potentially Significant Impact with Mitigation***

Table Source: Sespe 2021 and Sespe 2022 as modified by Benchmark Resources in 2022.

Table Notes: Figure 4.1-1 displays the location of these viewpoints in relation to the project sites.

Bold text indicates potentially significant impact.

Italic text indicates impact ratings with mitigation applied as described in the text following this table.

a = Stage 1 of the proposed project would continue concurrent operations at both the Quarry Site and the Plant Site for up to 30 years. At the Plant Site, the existing, inactive asphalt plant would be replaced with a modern asphalt plant, periodic use of a portable crushing plant to recycle come-back concrete (unused concrete in mixer upon return to plant) would continue with the addition of the import of concrete and asphalt debris for recycling. The Plant Site would be mined to a depth of approximately 85 feet below the ground surface. Mining would continue at the Quarry Site and an aggregate processing plant would be added.

b = Stage 2 of the proposed project would continue hard rock mining and processing operations only at the Quarry Site for approximately 70 additional years. The ready-mix concrete plant, hot-mix asphalt plant, and portable crushing plant to recycle come-back concrete and imported concrete and asphalt debris would be relocated from the Plant Site to the Quarry Site.

c = Upon completion of mining at the Plant Site at the end of Stage 1, operations at the Plant Site would cease, all equipment and septic systems would be removed, and the site reclaimed as 122 acres of open space, and riparian and open water wildlife habitat. Upon completion of mining at the Quarry Site at the end of Stage 2, operations would cease, all equipment and septic systems would be removed, and the site reclaimed to open space, and riparian and open water wildlife habitat.

d = A potentially significant impact would result if it is determined that the proposed project could potentially lower the visual quality of an identified sensitive viewpoint by -3 points or more.

e = These views are representative of the potential views from nearby private residencies and/or residential communities.

f = Mitigation at the Quarry Site would involve staining of the quarry pit high walls with an earth tone rock-staining product following the completion of active mining of each phase. Therefore, mitigation would begin during Stage 2 and would be carried out until the completion of reclamation.

g = Mitigation did not substantially alter view ratings or potential significance because there is limited visibility of the quarry pit from this location.

h = Potential impacts are greater during Stage 2 with mitigation because the contrast between the stained and unstained sections of the quarry pit highwalls would temporarily result in modifications that are more discordant and disharmonious than would occur without mitigation.

Quarry Site Scenic Vistas

As shown on Figure 2-4 and Figure 2-8, new processing and production facilities (i.e., aggregate processing plant, ready-mix concrete plant, and hot-mix asphalt plant) would be added to the northeast corner of the Quarry Site. The proposed facilities would be located in a previously excavated pit approximately 30 feet bgs in order to minimize their visibility. The new processing and production facilities, which have typical heights of about 75 feet above the ground surface, could be visible from potentially sensitive viewpoints. Additionally, the quarry pit on the Quarry Site would be excavated to depths of 600 feet below the ground surface, with the hard rock mined in approximately 50-foot-high benches. These changes could also be visible from potentially sensitive viewpoints.

As summarized in Table 4.1-3 above, views of the Quarry Site from Locations #2, #3, #4, #10, #12, and #13 would be degraded from what currently exists today. Visual quality from Location #1 would remain similar to existing conditions due to the screening of the berm along the San Joaquin River and would improve slightly upon the completion of reclamation because of the removal of stockpiled materials from the site. Visual quality from Location #11 would improve due to the installation of new landscaping along the berm and an architecturally designed entrance gate.

Due to the close proximity of Locations #2, #3, #4, #10, #12, and #13 to the Quarry Site, viewers in these public and private areas currently have an unobstructed view of portions of the existing Quarry Site and proposed processing equipment and excavation areas therein. As shown in the photo simulations (Figures 4.1-2 through 4.6, and 4.1-11 through 4.1-14), portions of the excavation areas within the Quarry Site would continue to be visible from these viewpoints during the 100-year life of the proposed project. Additionally, the top of the proposed aggregate processing plant would be visible during Stage 1 and 2 operations and the tops of the processing and production equipment (i.e., aggregate processing plant, ready-mix concrete plant, and hot-mix asphalt plant) would also be visible during Stage 2 operations.

The changes to views at Locations #2, #3, #4, and #10 would be minor in nature, with visual quality decreasing by 1 to 2 points. At Locations #12 and #13, the changes would decrease visual quality by -4 and -6 points, exceeding the -3 point threshold of significance for impacts to sensitive viewpoints. The decrease in visual quality would be primarily driven by the expansion and deepening of the quarry pit. The quarry pit would be clearly visible from Locations #12 and #13, and its engineered and linear benches would present a significant contrast to existing and Stage 1 conditions resulting in visual quality that is discordant and promotes disharmony with the surrounding open space environment. The implementation of Mitigation Measure 4.4-1 would require the quarry pit benches to be stained with an appropriate earth tone rock-staining product to reduce

the color contrast between the pit walls and the surrounding undisturbed slopes. The staining would be implemented in sections along the quarry pit highwalls, following the completion of each mining phase.

Table 4.1-3 indicates that the staining would reduce the visual quality of views from Locations #12 and #13 during Stage 2 operations by -5 points due to the additional contrast that would be created when the pit walls are partially stained. Upon completion of reclamation, the visual quality of views would improve relative to the unmitigated condition but would still be significant due to the size of the quarry pit and the discordant appearance created by the engineered and linear benches.

Detailed changes in the viewpoints from these locations are summarized as follows:

- **Location #2**: This viewpoint is from the Lost Lake Regional Park, located immediately north of the northwest corner of the Quarry Site. The Lost Lake Park is a public park under control/ownership of Fresno County. As shown in photo simulations on Figure 4.1-3 above, the only visible change at this location would occur during Stage 1 and 2 operations, when the top portion of the excavation areas would be visible at the Quarry Site. However, since the Quarry Site is currently mostly excavated up to 50-feet bgs and the proposed would deepen the excavation to a final depth of up to 600-feet bgs, the visible portion of the excavation areas would be minimal, and the majority of the existing landscape visible would remain unchanged. Furthermore, once operations have ceased and the site is revegetated and reclaimed, the overall visual quality of Quarry Site from this location are expected to improve compared to baseline conditions. For these reasons, the visual impacts to the scenic vista at Location #2 would be less than significant.
- **Location #3**: This viewpoint is east of the Quarry Site entrance along North Friant Road (and its associated bicycle lane) looking west towards the Quarry Site. As shown in photos simulations on Figure 4.1-4 above, during Stage 1 operations, the existing berm would be landscaped, and architectural entrance gate would be constructed. Due to the visual screening provided by these proposed project features, only a small portion of the excavation areas would be visible at the Quarry Site. Additionally, because the aggregate plant would be located approximately 30 feet bgs and located to the north behind the landscaped berm, the entirety of the structure(s) would be obscured by the existing excavation pit walls. During Stage 2 operations, when the ready-mix concrete and hot-mix asphalt plants are added next to the aggregate plant, both plants would also be located approximately 30 feet bgs and obscured by the landscaped berm. The potential future trail easement proposed along the western boundary of the

Quarry Site would not be seen. The visible portion of the excavation areas is minimal and would only minimally change from existing conditions. Additionally, the landscaping would likely improve, or at a minimum maintain, the visual character of this area. Ultimately, as with Location #2, once operations have ceased, the equipment removed, and the site is revegetated/reclaimed, the overall visual quality of this area and Quarry Site would improve. For these reasons, the visual impacts to the scenic vista at Location #3 would be less than significant.

- **Location #4**: This viewpoint is looking southwest toward the Quarry Site from North Friant Road and the bicycle lane. Views are similar to those described above for Location #3. However, this viewpoint is further from the Quarry Site than Location #3, and therefore visual impacts are reduced due to this increased distance. As shown in photos simulations on Figure 4.1-5 above, during Stage 1 operations, the top portion of the excavation areas and the top of the aggregate plant would be visible at the Quarry Site. During Stage 2 operations, small portions of the excavation areas and the tops of the aggregate processing plant, ready-mix concrete plant, and hot-mix asphalt plant would be visible. However, the visible portions of the operations would be minimal. Stage 1 and 2 operations would not visible from the potential future trail easement proposed along the western boundary of the Quarry Site. As with the other locations, once operations have ceased and the Quarry Site is revegetated/reclaimed, the overall visual quality of this area and Quarry Site would improve. For these reasons, the visual impacts to the scenic vista at Location #4 would be less than significant.
- **Location #10:** This viewpoint represents the view looking southwest toward the Quarry Site from a private neighborhood just east of North Friant Road (Figure 4.1-11). Views are similar to those described above for Location #4. While this viewpoint is further from the Quarry Site than Location #4, this viewpoint is at a slightly higher elevation by comparison, and therefore potentially has a more direct line-of-sight into the excavation pit. During Stage 1 operations, even with the installation of the berm/landscaping, the top portion of the excavation areas and the top of the aggregate plant would be partially visible. During Stage 2 operations, portions of the excavation areas and the tops of the aggregate processing plant, ready-mix concrete plant, and hot-mix asphalt plant would also be partially visible. However, the visible portions of the operations and quarry pit would be minimal, and the surrounding landscapes/landforms (e.g., ponds, hillsides, vegetation, etc.), all of which would be unaffected by the proposed project, would remain the dominant visual features in the area. The Stage 1 and 2 operations would not be visible from the potential future trail easement proposed along the western boundary of the Quarry Site. As with the other locations, once

operations have ceased and the site is revegetated/reclaimed, the overall visual quality of this area and Quarry Site are expected to improve compared to existing conditions. Due to the minor nature of the visual changes anticipated at Location #10, impacts are considered less than significant.

- **Location #11:** This viewpoint represents the view east of the Quarry Site entrance within the private residential neighborhoods, specifically along Bluff View Avenue, looking west towards the Quarry Site. Views are similar to those described above for Location #3. As shown in the photo simulations (Figure 4.1-12), during Stage 1 operations the dominant visible project feature would be the landscaped berm and architecturally designed entrance gate. Only a small top portion of the expanded quarry pit would be visible. Because the aggregate plant would be located approximately 30 feet bgs located to the north behind the landscaped berm, the majority of the plant structure(s) would be obscured. During Stage 2 operations, the landscaped berm and entrance gate would remain the most visible project feature; however, the tops of the ready-mix concrete plant and hot-mix asphalt plant would also be partially visible in the background. While the top portions of the expanded quarry pit/plant structures would be visible, this represents only a nominal change compared to baseline conditions (i.e., existing excavation pit is already distinctly visible from this location). The Stage 1 and 2 operations would not be visible from the potential future trail easement proposed along the western boundary of the Quarry Site. Due to the installation of the landscape berm, visual quality from this viewpoint is expected to slightly improve compared to existing conditions. Ultimately, once operations have ceased, the equipment removed, and the site is revegetated/reclaimed, the overall visual quality of this is expected to improve. The implementation of Mitigation Measure 4.1-1 would not substantially alter the visual quality of views from Location #11 due to the limited visibility of the quarry pit high walls from this location (as shown on Figure 4.1-12). For these reasons, the visual impacts at Location #11 would be relatively minor in nature and are expected to result in a beneficial impact at the conclusion of mining, thus the impacts would be less than significant.
- **Location #12:** This viewpoint represents the view from within the private community of Sumner Hill, specifically along Killarney Drive, looking northeast towards the Quarry Site. This viewpoint is west of the San Joaquin River, within Madera County. As shown in photo simulations (Figure 4.1-13), Stage 1 visual conditions at this location are not expected to change significantly. The top portion of the expanded quarry pit would be partially visible, and the adjacent aggregate plant would be visible in the background. During Stage 2 operations, the expanded quarry pit would be a clearly visible project feature and the added ready-mix concrete plant and hot-mix asphalt plant would also be visible in the

background. The quarry pit would remain clearly visible post-reclamation. The quarry pit's engineered and linear benches would present a significant contrast to existing and Stage 1 conditions resulting in visual quality that is discordant and promotes strong disharmony with the surrounding open space environment. Therefore, this modification represents a significant change compared to existing conditions. The benches are located in hard rock, which is not supportive of the growth of a plant canopy and would therefore not be revegetated under the proposed reclamation plan. The potential future trail easement proposed along the western boundary of the Quarry Site would also be visible but would be similar to the existing access road along that area. As with the other viewpoints assessed, once operations have ceased, the equipment removed, and the Quarry Site is revegetated/reclaimed, the overall visual quality of the reclaimed Quarry Site would slightly improve relative to the operational stages, but the hard rock benches of the quarry pit would remain clearly visible. Mitigation Measure 4.1-1 is proposed to lessen this impact to the greatest extent feasible; however, because the quarry pit would remain visible during Stage 2 operations and post-reclamation (as shown on Figure 4.1-15), the visual impacts at Location #12 are considered significant and unavoidable.

- **Location #13:** This viewpoint also represents the view from within the private community of Sumner Hill, specifically at the end of Croom Place, looking east towards the Quarry Site. Views here are similar to those described above for Location #12. As shown in photos simulations (Figure 4.1-14), Stage 1 visual conditions at this location are not expected to change significantly, and only the top portions of the expanded quarry pit would be partially visible and the adjacent aggregate plant would be visible in the background. As with Location #12, during Stage 2 operations the expanded quarry pit would be a clearly visible project feature, and the added ready-mix concrete plant and hot-mix asphalt plant would also be visible in the background. The quarry pit would remain clearly visible post-reclamation. The quarry pit's engineered and linear benches would present a significant contrast to existing and Stage 1 conditions resulting in visual quality that is discordant and promotes disharmony with the surrounding open space environment. Therefore, this modification represents a significant change compared to baseline conditions. The potential future trail easement proposed along the western boundary of the Quarry Site would also see the Stage 1 and 2 operations but would be similar to the existing access road along that area. As with Location #12, once operations have ceased, the equipment removed, and the site is revegetated/reclaimed, the overall visual quality of the reclaimed site would slightly improve relative to the operational stages, but the hard rock benches of the quarry pit would remain clearly visible. Mitigation Measure 4.1-1 is proposed

to lessen this impact to the greatest extent feasible; however, because the quarry pit would remain visible during Stage 2 operations and post-reclamation (as shown on Figure 4.1-16), the visual impacts at Location #13 are considered significant and unavoidable.

As shown in the photo simulations of Locations #1 and #5 at the Quarry Site (Figures 4.1-2 and 4.1-6), the proposed project would not alter visual quality during Stage 1 and Stage 2 operations because the existing river banks/perimeter berms significantly block views of the existing and proposed operations from these low-lying areas on the San Joaquin River. The visual quality would improve slightly at Location #1 after reclamation is complete and would remain the same as existing conditions at Location #5. Thus, impacts to scenic vistas at Locations #1 and #5 would be less than significant.

Impact Summary

Views of the Plant Site from all the potentially sensitive viewpoints (i.e., Locations #6, #7, #8, and #9) would remain largely similar to existing conditions during Stage 1 operations and would improve after completion of site reclamation due to the removal of processing equipment and revegetation of the site.

Visual quality at certain viewpoints immediately adjacent to the Quarry Site (i.e., Locations #2, #3, #4, #10) would be minimally impacted during Stage 1 and Stage 2 operations of the proposed project due to the addition of processing equipment to the site (i.e., aggregate processing plant, ready-mix concrete plant, and hot-mix asphalt plant). Conversely, due to the installation of the landscaping and architecturally designed entrance gate, visual quality is expected to result in a net improvement at Location #11 at the Quarry Site. Visual quality from viewpoints at Locations #1 and #5 would not change because the existing river banks/perimeter berms significantly block views of the existing and proposed operations. Upon the completion of reclamation, the visual quality of the views of the Quarry Site from all five public viewpoints (Locations #1 through #5) and two of the four private viewpoints (Location #10 and #11) would be similar to, or result in a net improvement, relative to existing conditions due to the revegetation of the site and removal of processing and production equipment. Visual quality from private viewpoints at Locations #12 and #13 would substantially decrease relative to existing conditions during Stage 2 operations and after the completion of reclamation due to the relatively unobstructed views of the expanded quarry pit that would consist of bedrock that cannot be revegetated. Implementation of Mitigation Measure 4.1-1 would reduce these impacts to the greatest extent feasible; however, the quarry pit's engineered and linear benches would remain visible and would have an appearance that is discordant and disharmonious with the surrounding open space land uses. For this reason, impacts

to views at Locations #12 and #13 would be significant and unavoidable during Stage 2 and after the completion of reclamation.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.1-1: *Rock Staining to Reduce Visual Contrast*

Following completion of active mining in each phase, an appropriate earth tone rock-staining product shall be utilized on the exposed and visible pit walls to reduce the color contrast between the pit walls and the surrounding undisturbed slopes.

Level of Significance After Mitigation: Significant and unavoidable.

Impact 4.1-2: Substantially Damage Scenic Resources, Including, But Not Limited to, Trees, Rock Outcroppings, and Historic Buildings Within a State Scenic Highway

As described in the "Scenic Highway" subsection 4.1.1.4 above, there are no Caltrans candidate or designated state scenic highways within the immediate vicinity of the project sites. The closest state scenic highway is State Route 168 located approximately 7.1 miles away to the southeast. Due to the large distance and intervening topography between State Route 168 and the project sites, proposed project processing and mining operations would not be visible from State Route 168. Therefore, the proposed would not damage scenic resources within a state scenic highway and there would be **no impact**.

Level of Significance: No impact.

Mitigation Measure: None required.

Impact 4.1-3: In Nonurbanized Areas, Substantially Degrade the Existing Visual Character or Quality of Public Views (i.e., Views Experienced from Publicly Accessible Vantage Points) of the Project Sites and Their Surroundings

As described in Impact 4.1-1, predicted visual impacts resulting from the proposed project at nearby existing and potential future public viewpoints (Locations #1 through #13 in Table 4.1-3 and shown on Figure 4.1-1) were assessed using BLM's Visual Resources Management System. As summarized in Table 4.1-3 and shown on Figures 4.1-2 through 4.1-14, during Stage 1 operations at both the Plant Site and Quarry Site, the change to visual quality would remain the same at most locations and decrease by 1 to 2 points at Locations #2, #3, #4, #10, #12, and #13 which face the Quarry Site. Similar decreases would occur during Stage 2 operations and after the completion of reclamation at these locations, with the exception that visual quality at Locations #12 and #13 would

decrease by up to -4 to -6 points relative to existing conditions, which reflects that a significant impact would occur to the quality of views of the Quarry Site and its surroundings due to the excavation of the quarry pit. Mitigation Measure 4.1-1, requiring application of earth toned rock-staining products on exposed/visible pit walls to reduce visual/color contrast, is proposed to lessen impacts to views at Locations #12 and #13. With the implementation of Mitigation Measure 4.1-1, the visual quality would improve at Locations #12 and #13 relative to Stage 2 operations and relative to the project without mitigation; however, the visual quality would still decrease by -3 points relative to existing conditions (Table 4.1-3). This is because the quarry pit's engineered and linear benches would remain visible with mitigation, as shown on Figures 4.1-15 and 4.1-16. Thus, the potential for the proposed project to substantially degrade the existing visual character or quality of public views from Locations #12 and #13 during Stage 2 operations and upon the completion of reclamation would be significant and unavoidable per the BLM scoring criteria.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure: *Implement Mitigation Measure 4.1-1.*

Level of Significance After Mitigation: Significant and unavoidable.

Impact 4.1-4: Creation of a New Source of Substantial Light and Glare That Would Adversely Affect Day or Nighttime Views in the Vicinity of the Project Sites

The issue of light and glare is typically associated with excessively bright nighttime lighting that crosses over property lines (i.e., "light trespass") and illuminates off-site yards or bedroom windows. It is also associated with the condition that occurs when excessive nighttime lighting creates a "skyglow" effect. The addition of new processing and production facilities to the Plant Site and Quarry Site would potentially increase light and glare from the project sites.

Plant Site Light and Glare

Existing nighttime lighting is used throughout the Plant Site to provide a safe working environment. The existing lighting would remain, and additional nighttime lighting would be installed at the proposed hot-mix asphalt plant. Additionally, certain hours of operation would be expanded at the Plant Site. Specifically, excavation as well as aggregate processing and recycling operations would be expanded from 6 p.m. to 7 p.m., and loading/unloading and aggregate trucking could occur between the hours of 4 a.m. and 9 p.m. under the proposed project, whereas under existing conditions the earliest

operations begin between 4 a.m. and 6 a.m., depending on the time of year, and end at 6:00 p.m. year-round.

High pressure sodium and/or cut-off fixtures (or equivalent International Dark-Sky Association-approved fixtures) would be used at the proposed hot-mix asphalt plant, which minimize the occurrence of light pollution (International Dark-Sky Association 2021). Furthermore, the new lighting would be required to comply with Section 858 of the Fresno County Zoning Ordinance, which states "any night lighting established on the property shall be arranged and controlled so as not to illuminate public rights-of-way or adjacent properties (Section 858.H.22)." Consistent with this requirement, the proposed Surface Mining and Reclamation Plan indicates that the new lighting would be designed to confine illumination to the Plant Site and/or to areas that do not include light-sensitive uses.

Mining would occur during daylight hours only, and therefore nighttime lighting would not be required throughout the excavation areas, even under the expanded hours of operation. A landscaped screen is located along the frontage of North Friant Road and would be maintained throughout Stage 1 operations which would minimize the light and glare visible off-site under the expanded hours of operation.

Upon completion of reclamation at the end of Stage 1 operations, all sources of light and glare would be removed from the Plant Site.

For these reasons, the potential of the proposed project to result in a new source of substantial light or glare at the Plant Site would be less than significant.

Quarry Site Light and Glare

New nighttime lighting fixtures would be required at the Quarry Site to provide a safe working environment at the proposed plant site. Lighting fixtures would be primarily centered around the plant equipment (north central portion of the facility as shown on Figure 2-9) as well as at the site entrance and along internal haul roads around the plant equipment as needed. Although the hours of excavation would expand to 6 a.m. to 7 p.m. from the current hours of 7 a.m. to 4:30 p.m., mining would occur during daylight hours only, and therefore nighttime lighting would not be required throughout the excavation areas despite the expanded hours.

The majority of nighttime lighting at the Quarry Site would be installed around the plant equipment (north central portion of the facility as shown on Figure 2-9). Because the plant site facilities would be located at a minimum of 30 feet bgs within the Quarry Site, the surrounding excavation pit walls would help shield excess light and keep it confined to

the site. The proposed landscaped berm at North Friant Road frontage would further reduce the light and glare visible off-site. High pressure sodium and/or cut-off fixtures (or equivalent International Dark-Sky Association-approved fixtures) would be used and would minimize the occurrence of light pollution (International Dark-Sky Association 2021). All new lighting would be required to comply with Section 858 of the Fresno County Zoning Ordinance, which states "any night lighting established on the property shall be arranged and controlled so as not to illuminate public rights-of-way or adjacent properties (Section 858.H.22)". Consistent with this requirement, the proposed Surface Mining and Reclamation Plan indicates that the new lighting would be designed to confine illumination to the Quarry Site and/or to areas that do not include light-sensitive uses.

Upon completion of reclamation at the end of Stage 1 and 2 operations, all sources of light and glare would be removed from the Quarry Site.

For these reasons, the potential of the proposed project to result in a new source of substantial light or glare at the Plant Site would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

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4.2—AGRICULTURAL AND FORESTRY RESOURCES

This section of the Draft EIR summarizes the physical characteristics of the existing agricultural and forestry resources within the boundaries of the proposed project, including identification of any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project boundaries. The analysis will address the conversion of farmland and forested land to urban uses, as well as any conflicts with existing zoning for agricultural or forestry uses. Furthermore, the section addresses the project's consistency with County policies and standards regarding agricultural and forestry resources.

4.2.1 Environmental Setting

The environmental setting for this analysis includes the Plant Site, Quarry Site, and adjacent lands. This section first describes the *Fresno County General Plan* land use designations and zoning classifications of the proposed project, and then outlines any protected farmland or forestry resources on or near the project sites.

4.2.1.1 General Plan Land Use Designations and Zoning Classifications

Both the Plant Site and Quarry Site are zoned Exclusive Agriculture (AE-20), 20-acre minimum parcel size (see Section 4.2.2.3, "Local," below). Surface mining operations and related facilities and activities are permitted in the AE-20 district subject to a Conditional Use Permit (CUP) under the provisions of Section 858 of the County Zoning Ordinance. The purpose of the AE-20 district, as described in the Agriculture and Land Use Element of the *Fresno County General Plan*, is to protect farming areas by permitting agricultural uses only and preserving agricultural lot sizes. Characteristic uses permitted in the district include farming, livestock, processing of agricultural products, agriculture-related businesses, and labor camps (Fresno County 2000).

4.2.1.2 Farmland

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) rates the Plant Site as "Vacant or Disturbed Land" and "Nonagricultural or Natural Vegetation" lands (see Figure 4.2-1, "Plant Site FMMP Designations") and the Quarry Site as "Vacant or Disturbed Land," "Farmland of Local Importance," and "Nonagricultural or Natural Vegetation" lands (see Figure 4.2-2, "Quarry Site FMMP Designations"). None of the land within the Plant Site or Quarry Site is rated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Lands adjacent to the Plant Site are rated "Nonagricultural or Native Vegetation," and "Farmland of Local Importance," and lands adjacent to the Quarry Site are categorized as "Rural Residential Land," "Nonagricultural or Native Vegetation," and "Farmland of Local Importance."

Furthermore, the property is not subject to a Williamson Act contract (DOC 2021a). Definitions of the important farmland mapping classifications are provided in Section 4.2.2.2, "State," below.

4.2.1.3 Forestry Resources

The Plant Site and Quarry Site are not designated or zoned for timberland production or other forestry related uses and are not in a designated Timberland Production Zone. Therefore, the project sites do not meet the definition for timberland provided in Public Resources Code (PRC) Section 4526, as described in Section 4.2.2, "Regulatory Setting," below.

4.2.2 Regulatory Setting

Relevant federal, state, and local programs and policies are discussed below.

4.2.2.1 Federal

Farmland Protection Policy Act (7 U.S.C. Sections 4201 et seq.)

Federal agencies must consider the impacts to Prime Farmland resulting from their actions under the Farmland Protection Policy Act (7 U.S.C. Sections 4201 et seq.). It is intended to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland.

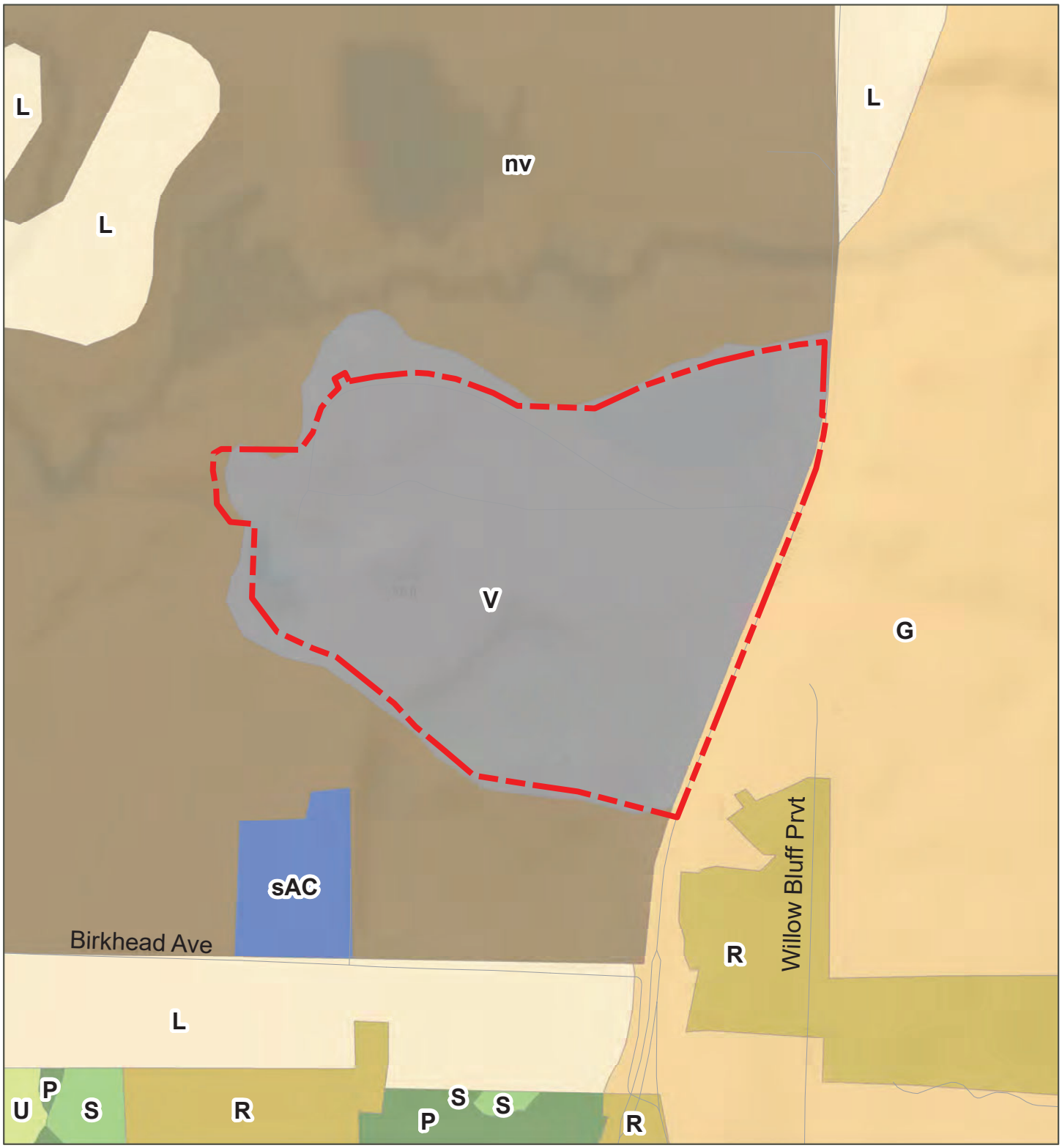
4.2.2.2 State

California Land Conservation Act (Williamson Act)

The California Land Conservation Act (Williamson Act) serves to preserve open spaces and agricultural land. The specific land uses allowed on agricultural lands under Williamson Act contract are regulated by each contract and by state law (Government Code Section 51200 et seq.).

Farmland Mapping and Monitoring Program

The California Department of Conservation, Division of Land Resources Protection, operates the FMMP. Government Code Section 65570 mandates FMMP to biennially report to the Legislature on the conversion of farmland and grazing land, and to provide maps and data to local government and the public.



SOURCES: Farmland Mapping & Monitoring designations, California Department of Conservation (dated 2018); ESRI World Shaded Relief accessed Dec. 2021; ESRI World Topographic Map accessed Dec 2021; ESRI World Streetmap, 2009; compiled by Benchmark Resources in 2021

Site Boundary	P	Prime Farmland	nv	Non-agricultural or Natural Vegetation
County Boundary	S	Farmland of Statewide Importance	R	Rural Residential Land
Street	U	Unique Farmland	sAC	Semi-Agricultural and Rural Commercial Land
	L	Farmland of Local Importance	V	Vacant or Disturbed Land
	G	Grazing Land		

BENCHMARK RESOURCES

N

0 400 800 1,600 Feet

Plant Site FMMP Designations
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.2-1

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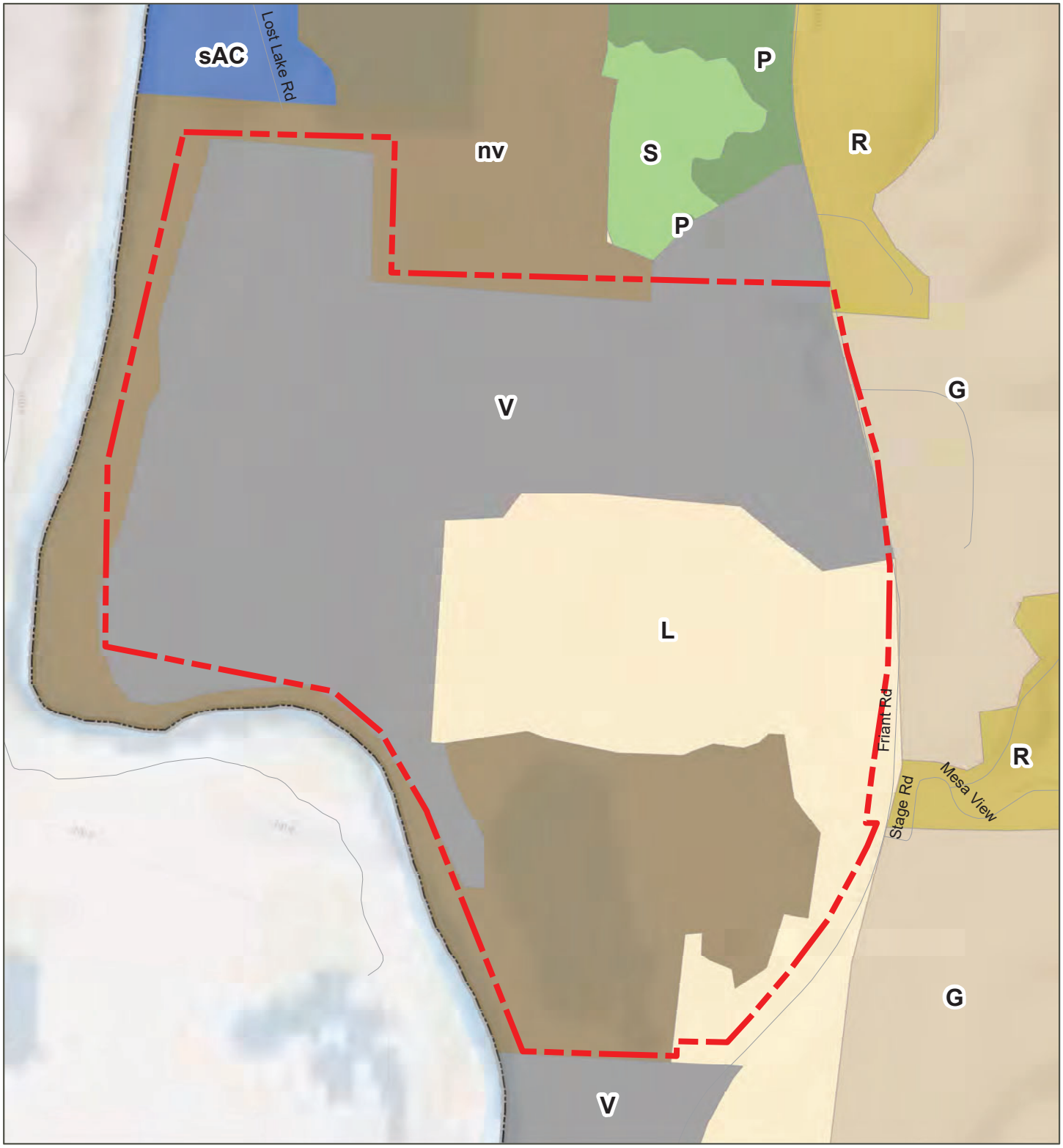

SOURCES: Farmland Mapping & Monitoring designations, California Department of Conservation (dated 2018); ESRI World Shaded Relief accessed Dec. 2021; ESRI World Topographic Map accessed Dec 2021; ESRI World Streetmap, 2009; compiled by Benchmark Resources in 2021

Site Boundary	P	Prime Farmland	nv	Non-agricultural or Natural Vegetation
County Boundary	S	Farmland of Statewide Importance	R	Rural Residential Land
Street	U	Unique Farmland	sAC	Semi-Agricultural and Rural Commercial Land
	L	Farmland of Local Importance	V	Vacant or Disturbed Land
	G	Grazing Land		

BENCHMARK RESOURCES

N

0 400 800 1,600 Feet

Quarry Site FMMP Designations
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.2-2

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FMMP farmland categories are based on local soil characteristics and irrigation status. Farmlands are classified according to soil factors, including available water holding capacity, temperature regime, acidity, depth to the water table, electrical conductivity, flooding potential, erosion hazard, permeability, rock content, and rooting depth. The FMMP categories are comprised of prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, grazing land, urban and built-up land, and other land. Only Prime Farmland, Unique Farmland, or Farmland of Statewide Importance are considered Important Farmland. All categories are defined below (DOC 2021b).

Prime Farmland

Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Farmland of Statewide Importance

Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Unique Farmland

Farmland of lesser quality soils used to produce the state's leading agricultural crops. This land is usually irrigated but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

Farmland of Local Importance

Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. In some counties, Confined Animal Agriculture facilities are part of Farmland of Local Importance, but they are shown separately.

Grazing Land

Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

Urban and Built-up Land

Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

Other Land

Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural lands surrounded on all sides by urban development and greater than 40 acres are mapped as Other Land.

The Rural Land Mapping Project provides more detail on the distribution of various land uses within the Other Land category in nine FMMP counties, including all eight San Joaquin Valley counties. The project may be expanded to the entire FMMP survey area as funding becomes available. The Rural Land categories include:

- Rural Residential Land (R)
- Semi-Agricultural and Rural Commercial Land (SAC)
- Vacant or Disturbed Land (V)
- Confined Animal Agriculture (Cl)
- Nonagricultural or Natural Vegetation (NV)
- Water (W)—Perennial water bodies with an extent of at least 40 acres.

Z'berg-Nejedly Forest Practice Act of 1973

The Z'berg-Nejedly Forest Practice Act of 1973 is the primary forest regulation statute in California and is generally referred to as the Forest Practice Act (FPA). The FPA provides for the California State Board of Forestry and Fire Protection to manage forest practices and resources, and the board developed Forest Practice rules to implement the FPA. The California Department of Forestry and Fire Protection (CAL FIRE) enforces the requirements of the FPA and serves as lead agency for projects which fall within the scope of the FPA. If timber operations (as defined by PRC Section 4527) are part of a project (or affected by a project), these operations must be approved by CAL FIRE.

Public Resources Code Section 12220(g)

California PRC Section 12220(g) defines forest land as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."

Public Resources Code Section 4526

California PRC Section 4526 defines timberland as land, other than land owned by the federal government and land designated as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees.

California Government Code Section 51104(g)

California Government Code Section 51104(g) defines "Timberland production zone" or "TPZ" as "an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h)."

4.2.2.3 Local

Fresno County Zoning Ordinance, Section 816

Section 816 of the County Zoning Ordinance describes the AE, or Exclusive Agriculture, district as follows:

> The "AE" District is intended to be an exclusive district for agriculture and for those uses which are necessary and an integral part of the agricultural operation. This district is intended to protect the general welfare of the agricultural community from encroachments of non-related agricultural uses which by their nature would be injurious to the physical and economic well-being of the agricultural district.
>
> The "AE" District shall be accompanied by an acreage designation which establishes the minimum size lot that may be created within the District. Acreage designations of 640, 320, 160, 80, 40, 20, 5 are provided.

Uses permitted subject to first securing an approved CUP include:

R. Building materials sales.

U. Off-site rock, sand, and gravel trucking operations which may include a newly created parcel size of not less than five acres (See Section 816.5-A.4) on sites located outside the Sphere of Influence of any City or community and

not located on productive agricultural land as defined in Section 204-02:3.02a of the General Plan (Fresno County 2018).

In addition, per Section 858, "*Regulations for Surface Mining and Reclamation in All Districts*," mining is a permitted use within this zone subject to approval of a CUP.

Fresno County General Plan—Agriculture Policies and Guidelines

California Government Code 65300 requires the County to prepare and adopt a general plan. Its purpose is to give long-range guidance to County officials making decisions affecting the growth and resources of the County. The *Fresno County General Plan* (Fresno County 2024) helps to ensure that day-to-day planning and land use decisions conform to the long-range program designed to protect and further the public interest. The General Plan is periodically reviewed and updated as the goals and requirements of the community evolve and change. Fresno County most recently updated the General Plan in February 2024. The following policies from the *Fresno County General Plan* related to agricultural resources apply to the proposed project.

Agriculture and Land Use Element

Section A. Agriculture

Goal LU-A: To promote the long-term conservation of productive and potentially-productive agricultural lands and to accommodate agricultural-support services and agriculturally-related activities that support the viability of agriculture and further the County's economic development goals.

Policy LU-A.1: The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available or can be provided consistent with the adopted General or Community Plan.

Policy LU-A.2: The County shall allow by right in areas designated Agriculture activities related to the production of food and fiber and support uses incidental and secondary to the on-site agricultural operation. Uses listed in Table LU-1 [of the *Fresno County General Plan*] are illustrative of the range of uses allowed in areas designated Agriculture.

Policy LU-A.3: The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities, including value added processing facilities, and certain non-

agricultural uses listed in Table LU3. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria:

a) The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics;
b) The use should not be sited on productive agricultural lands if less productive land is available in the vicinity;
c) The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius;
d) A probable workforce should be located nearby or be readily available;
e) For proposed agricultural commercial center uses the following additional criteria shall apply:
    1) Commercial uses should be clustered in centers instead of single uses.
    2) To minimize proliferation of commercial centers and overlapping of trade areas, commercial centers should be located a minimum of two miles from a city sphere of influence and of four (4) miles from any existing or approved agricultural or rural residential commercial center or designated commercial area of any city or unincorporated community.
    3) New commercial uses should be located within or adjacent to existing centers.
    4) Sites should be located on a major road serving the surrounding area.
    5) Commercial centers should not encompass more than one-quarter (1/4) mile of road frontage, or one-eighth (1/8) mile if both sides of the road are involved, and should not provide potential for developments exceeding ten (10) separate business activities, exclusive of caretakers' residences;
f) For proposed value-added agricultural processing facilities, the evaluation under criteria "a" above, shall consider the service requirements of the use and the capability and capacity of cities and unincorporated communities to provide the required services; and
g) For proposed churches and schools, the evaluation under criteria LU-A.3a above shall include consideration of the size of the facility. Such

facilities should be no larger than needed to serve the surrounding agricultural community.

h) When approving a discretionary permit for an existing commercial use, the criteria listed above shall apply except for LU-A.3b, e2, e4, and e5.

Policy LU-A.4: The County shall require that the recovery of mineral resources and the exploration and extraction of oil and natural gas in areas designated Agriculture comply with the Mineral Resources Section of the Open Space and Conservation Element (See Section OS-C).

Policy LU-A.6: The County shall maintain twenty (20) acres as the minimum permitted parcel size in areas designated Agriculture, except as provided in Policies LU-A.9, and LU-A.10. The County may require parcel sizes larger than twenty (20) acres based on zoning, local agricultural conditions, and to help ensure the viability of agricultural operations.

Policy LU-A.11: The County may allow by discretionary permit creation of substandard size lots when such action is deemed necessary by the Board of Supervisors for the recovery of mineral resources and the exploration and extraction of oil and gas in accordance with the policies of Section OS-C, Mineral Resources, of the Open Space and Conservation Element. In no case shall such action result in creation of lots less than five (5) gross acres in size.

Policy LU-A.13: The County shall protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.

Policy LU-A.14: The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.

Policy LU-A.18: The County shall encourage land improvement programs to increase soil productivity in areas containing lesser quality agricultural soils.

Policy LU-A.19: The County shall encourage landowners to participate in programs that reduce soil erosion and increase soil productivity. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC Cooperative Extension, and other agencies and organizations.

Policy LU-A.20: The County shall adopt and support policies and programs that seek to protect and enhance surface water and groundwater resources

critical to agriculture. (See Section OS-A, Water Resources; and Section PF-C, Water Supply and Delivery)

Section C. River Influence Areas

Goal LU-C: To preserve and enhance the value of the river environment as a multiple use, open space resource; maintain the environmental and aesthetic qualities of the area; protect the quality and quantity of the surface and groundwater resources; provide for long term preservation of productive agricultural land; conserve and enhance natural wildlife habitat; and maintain the flood-carrying capacity of the channel at a level equal to the one (1) percent flood event (100-year flood).

Policy LU-C.2: Within the San Joaquin River Corridor Overlay, the County shall accommodate agricultural activities with incidental homesites, recreational uses, sand and gravel extraction, and wildlife habitat and open space areas.

Policy LU-C.5: The County may allow the extraction of rock, sand, and gravel resources along the San Joaquin River consistent with the Minerals Resources section policies of the Open Space and Conservation Element.

Open Space and Conservation Element

Section C. Mineral Resources

Goal OS-C: To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.

Policy OS-C.4: The County shall impose conditions as necessary to minimize or eliminate the potential adverse impact of mining operations on surrounding properties.

Policy OS-C.6: The County may accept California Land Conservation (Williamson Act) contracts on land identified by the State as containing significant mineral deposits subject to the use and acreage limitations established by the County.

Policy OS-C.10: The County shall not permit land uses that threaten the future availability of a mineral resource or preclude future extraction of those resources.

Policy OS-C.18: The County shall establish procedures to ensure that exploration and recovery of mineral resources, including oil and natural gas, will occur under appropriate locational and operational standards within areas designated Agriculture and Westside Rangeland.

4.2.3 Significance Criteria and Analysis Methodology

4.2.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to agricultural or forestry resources if it would:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract;
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g));
d) Result in the loss of forest land or conversion of forest land to non-forest use; or
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

4.2.3.2 Analysis Methodology

The following analysis of agriculture and forest resources was based on review of current uses, soil characteristics, and FMMP classifications at the Plant Site and Quarry Site. This information was used to determine the proposed project's specific agriculture-related impacts.

4.2.4 Project Impacts and Mitigation Measures

Impact 4.2-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as Shown on the Maps Prepared Pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to Non-Agricultural Use

The Plant Site and Quarry Site do not include Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The project sites have been classified by the FMMP of the California Department of Conservation (DOC) as "Vacant or Disturbed Land,"

"Farmland of Local Importance," and "Nonagricultural or Natural Vegetation," all of which are not considered important farmland categories (DOC 2021a). See Figures 4.2-1 and 4.2-2 above. Therefore, the proposed project would not result in conversion of important farmland.

Level of Significance: No Impact.

Mitigation Measure: None required.

Impact 4.2-2: Conflict with Existing Zoning for Agricultural Use, or a Williamson Act Contract

The Plant Site and Quarry Site are both zoned AE-20, Exclusive Agriculture, district. In accordance with Section 858 of the Fresno County Zoning Code, mining is a permitted use within this zone subject to approval of a CUP. The Plant Site and Quarry Site's zoning designations would not change under the proposed project. Therefore, implementation of the proposed project would not conflict with the existing zoning for an agricultural use. No impact relating to an agricultural zoning conflict would occur.

The Plant Site and Quarry Site are both not subject to a Williamson Act contract; therefore, there would be no impact related to conflicts with a Williamson Act contract (DOC 2021a).

Level of Significance: No Impact.

Mitigation Measure: None required.

Impact 4.2-3: Conflict with Existing Zoning for, or Cause Rezoning of, Forest Land (as Defined in Public Resources Code Section 12220(G)), Timberland (As Defined by Public Resources Code Section 4526), or Timberland Zoned Timberland Production (as Defined by Government Code Section 51104(G))

No forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)) are located on or in the vicinity of the Plant Site or Quarry Site are both. Therefore, no conflict with zoning for forest land, timberland, or timberland production would occur.

Level of Significance: No Impact.

Mitigation Measure: None required.

Impact 4.2-4: Result in the Loss of Forest Land or Conversion of Forest Land to Non-Forest Use

No forestland (as defined in Public Resources Code Section 12220(g)) or timberland (as defined by Public Resources Code Section 4526) is located on or in the vicinity of the Plant Site or Quarry Site. Therefore, no loss or conversion of forest land would occur.

Level of Significance: No Impact.

Mitigation Measure: None required.

Impact 4.2-5: Involve Other Changes in the Existing Environment Which, Due to Their Location or Nature, Could Result in Conversion of Farmland, to Non-Agricultural Use or Conversion of Forest Land to Non-Forest Use

The conversion of farmland to non-agricultural use can be promoted indirectly. Such conversion could result from increasing nuisance complaints from residents against farmers who operate adjacent to new urban uses (e.g., noise, dust, and odors). The proximity of farmland to new urban infrastructure can increase the value of the land for urbanization. Urbanization can also impact neighboring agricultural operations by increasing land values and taxes on land without Williamson Act protection. These scenarios can compel landowners to consider urbanization over continued farming.

The proposed project would not expand infrastructure or increase urbanization in the area. Furthermore, Plant Site and Quarry Site mining activities are consistent with the agricultural policies of the County Zoning Code and County General Plan. Upon the conclusion of mining activity, all equipment would be removed and both sites would be reclaimed to open space, riparian, and open water wildlife habitat. The land use designation for agricultural use would not change and urbanization would not occur as a result of the proposed project. This impact would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

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4.3—AIR QUALITY

This section of the Draft EIR documents potential project impacts associated with air quality and air pollutant emissions. Impacts considered in this section include the potential for project air emissions to exceed established thresholds or to cause or contribute to exceedance of state or federal ambient air quality standards. The section also considers human health risks associated with air pollutant emissions resulting from the project and the potential for public nuisance as a result of project odors.

The information in this section is based on a peer review of applicant-prepared studies and publicly available sources. The applicant-prepared studies used are:

- *Air Quality, Health Risk, and Climate Change Impact Assessment*. CEMEX Rockfield Modification Project, County of Fresno, California. Prepared by Sespe Consulting, Inc. [Sespe]. December 4, 2019. (Appendix D-1, "Air Quality, Health Risk, and Climate Change Impact Assessment")
- *Rockfield Air Quality Section Addendum No. 2, Revision 2*. CEMEX Rockfield Modification Project. Prepared by Sespe. March 7, 2022. (Appendix D-2, "Addendum to Air Quality, Health Risk, and Climate Change Impact Assessment")

The *Air Quality, Health Risk, and Climate Change Impact Assessment* (Air Quality Assessment) was peer reviewed by County-retained Taylor Environmental Services, Inc. (Taylor Environmental) in September 2020. The peer review comments are on file with the County. In October of 2020, Sespe prepared *Addendum No. 2 (Version 1) to the Air Quality, Health Risk, and Climate Change Impact Assessment.* Comments were provided by Taylor Environmental and Sespe updated the document in response. In December 2020, Taylor Environmental confirmed that *Addendum No. 2 (Version 1)* adequately addressed the peer review comments. In May 2021, comments on *Addendum No. 2 (Version 1)* were provided by Benchmark Resources. Per Benchmark's comments, Sespe provided an updated document (*Addendum No. 2, Revision 1*) in June 2021. Further comments were provided by Benchmark in February 2022. In response, Sespe revised the addendum again in March 2022, creating *Addendum No. 2, Revision 2*. Benchmark confirmed that the *Rockfield Air Quality Section Addendum No. 2, Revision 2* (Addendum) completed in March 2022 adequately addressed all comments and questions.

4.3.1 Environmental Setting

Location and the amount of air pollutants are the primary factors that influence air quality; however, topography, climate, and meteorological conditions are also influential factors because they determine the movement and dispersal of air pollutants. California

is divided into fifteen air basins, each with its own unique regional climate. The Quarry Site and Plant Site (project sites) are located in the central portion of the San Joaquin Valley Air Basin (Basin).

Although marine air generally flows into the Basin from the San Joaquin River delta, the region's topographic features restrict air movement within the Basin. The Coast Range hinders wind access into the Valley from the west, the Tehachapi Mountains prevent southerly passage of air, and the Sierra Nevada mountain range to the east is a barrier to air movement. These topographic features result in weak air flow, which becomes blocked vertically by high barometric pressure over the Basin. As a result, the Basin is susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500 to 3,000 feet).

During the summer season, wind usually originates at the north end of the Valley, passing through Tehachapi Pass into the Mojave Desert Air Basin. During the winter, wind occasionally originates from the south end of the Valley and flows in a north-northwesterly direction. During the winter months, the Valley experiences light, variable winds, which are usually less than 10 miles per hour (mph). Low wind speeds combined with low inversion layers during the winter creates a climate conducive to the accumulation of carbon monoxide (CO) and suspended particulate matter.

The local climatology of the project sites are best represented by ambient temperature measurements at the Western Regional Climate Center (WRCC)-operated Friant Government Camp Station in Fresno County. The highest average monthly maximum temperatures of about 100°F occur in July (WRCC 2012a). The lowest average monthly minimum temperatures of about 37°F occur in December and January (WRCC 2012a). Average annual precipitation of approximately 14 inches occurs as rainfall primarily during the months of November through March (WRCC 2012b). Summer rainfall is minimal and generally limited to scattered thundershowers over the Sierra Nevada mountain range.

4.3.1.1 Environmental Factors Affecting Air Quality

Ambient concentrations of air pollutant emissions are determined by the amount of emissions released by pollutant sources and the atmosphere's ability to transport and dilute such emissions. Natural factors affecting transport and dilution include terrain, wind, atmospheric stability, and sunlight. Existing air quality conditions in the project area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutants. The environmental factors that affect ambient air pollutant concentrations are discussed separately below.

Topography, Wind Speeds, and Inversion Layers

Low wind speed conditions limit horizontal air dispersion and can result in the buildup of air pollutants. Poor air quality under low wind speed conditions can be especially pronounced in interior valleys such as the Basin, where the topography also contributes to the restriction of air movement and pollutant dispersion.

Inversion layers exist when the air temperature increases with elevation above the ground. The strength, altitude of, and duration of inversions determine the amount of vertical atmospheric mixing which occurs, which subsequently determines suspended particulate matter concentrations in the Basin. Temperature inversions occur in a stable atmosphere of warm air over cooler air hindering the upward dispersion of pollutants. Mixing ceases at the base of the inversion, which is also known as the mixing height. The Basin experiences two common types of inversions: radiation inversions and subsidence inversions.

Nocturnal cooling of an air layer near the Basin floor causes radiation inversions. It extends upward several hundred feet and occurs during the evening and early morning hours. During a radiation inversion, little vertical mixing occurs near the surface. The inversion dissipates when solar radiation warms the ground, which in turn heats the lower layers of the atmosphere. This heating causes the surface-based inversion to weaken, and finally dissipate, which allows vertical mixing through a greater depth in the atmosphere. Inversions are more persistent (stable) during the winter months, when inversions occur from 50 to 1,000 feet above the Basin floor. Studies in the southern part of the Basin indicate more frequent and persistent early morning radiation inversions than in the northern part of the valley due to the lack of marine air intrusion.

Subsidence inversions are caused by downward vertical motion in the atmosphere. As air descends, it warms due to compression, and as a result becomes warmer than the air beneath it. This is common when the semi-permanent Pacific High pressure system is located off the west coast, which typically occurs during the summer months (San Joaquin Valley Air Pollution Control District [Air District] 2003).

Solar Radiation and its Impact on Photochemical Pollutants

The higher intensity and longer duration of solar radiation during the Valley's summer months provide ultraviolet light and warm temperatures that promote the formation of secondary photochemical pollutants (e.g., ozone). Sunlight intensity and summer temperatures are much higher in inland areas than near the coast, causing them to be especially prone to photochemical air pollution. In contrast, photochemical pollutants do not usually reach significant levels anywhere in the Valley during the winter, when temperatures are lower and daylight hours are shorter.

4.3.1.2 Pollutants and Health Effects

Air pollution contributes to a wide variety of adverse health effects. The U.S. Environmental Protection Agency (EPA) has established national ambient air quality standards (NAAQS) for six of the most common air pollutants—CO, lead, ground-level ozone (O_3), particulate matter, oxides of nitrogen (NO_x), and oxides of sulfur (SO_x)—known as "criteria" air pollutants. The California Air Resources Board (ARB) also has adopted California ambient air quality standards (CAAQS) for these same criteria air pollutants. In this Draft EIR, NAAQS and CAAQS are also referred to as the "state and federal ambient air quality standards." The presence of criteria pollutants in ambient air is generally caused by numerous, diverse, and widespread sources of emissions.

Ambient air quality standards are established to protect the public from adverse health effects of criteria pollutants and to provide protection against visibility impairment and damage to animals, crops, vegetation, or buildings.

The Office of Environmental Health Hazard Assessment (OEHHA) relies upon the following definition of "adverse respiratory health effect":

> *Medically significant physiologic or pathologic changes generally evidenced by one or more of the following:*
>
> 1. *Interference with the normal activity of the affected person or persons;*
> 2. *Episodic respiratory illness;*
> 3. *Incapacitating illness;*
> 4. *Permanent respiratory injury; and/or*
> 5. *Progressive respiratory dysfunction. (OEHHA, 6/2004).*

OEHHA considers the following "dimensions" of adverse effects when determining an adverse health effect:

1. *Biomarkers: These should be considered; however it must be kept in mind that few biomarkers have been validated sufficiently to establish their use for defining a point at which a response becomes adverse, consequently, not all changes in biomarkers should necessarily be considered adverse.*
2. *Quality of life: In recent years, decreased health-related quality of life has become widely accepted as an adverse health effect. The review committee concluded that reduction in quality of life, whether in healthy persons or persons with chronic respiratory disease, should be considered as an adverse effect.*
3. *Physiological impact: The committee recommended that small, transient reductions in*

pulmonary function should not necessarily be regarded as adverse, although permanent loss of lung function should be considered adverse. The committee also recommended that reversible loss of lung function in conjunction with symptoms should be considered adverse.

4. *Symptoms: Air pollution-related symptoms associated with reduced quality of life or with a change in clinical status (i.e., requiring medical care or a change in medications) should be considered adverse at the individual level. At the population level, the committee suggested that any detectable increase in symptom frequency should be considered adverse.*
5. *Clinical outcomes: Detectable effects of air pollution on clinical measures should be considered adverse. More specifically, the ATS committee cited as examples increases in emergency department visits for asthma or hospitalizations for pneumonia, at the population level, or an increased need to use bronchodilator medication, at the individual level. The committee recommended that: "no level of effect of air pollution on population-level clinical indicators can be considered acceptable."*
6. *Mortality: Increased mortality should clearly be judged as adverse.*
7. *Population health versus individual risk: The committee concluded that a shift in risk factor distribution, and hence the risk profile of an exposed population, should be considered adverse when the relationship between the risk factor and the disease is causal, even if there is no immediate occurrence of obvious illness. (OEHHA, 6/2004).*

Based on these recommendations, many health outcomes found to be associated with criteria pollutants could be considered adverse including pulmonary function changes accompanied by symptoms, pulmonary function changes and respiratory symptoms that reduce quality of life, large changes in pulmonary function, clinical outcomes such as emergency department visits for asthma, hospitalization for respiratory and cardiovascular disease, and mortality. Research now shows that some highly susceptible individuals may respond to common exposures at or close to natural background pollutant levels that are often unavoidable. Health effects that have been associated with each of the criteria pollutants are summarized below.

Ozone

Ground-level ozone is a secondary pollutant that forms through the reaction of NO_x and volatile organic compounds (VOCs) in the atmosphere by a photochemical process involving sun energy. Chemicals that are precursors to ozone formation can also be emitted by natural sources, particularly trees and other plants. Generally, air districts prioritize NO_x reductions over VOC reductions because NO_x reductions would have greater effect on reducing ozone concentrations and be more protective of public health.

Ground-level ozone can pose risks to human health, in contrast to the stratospheric ozone layer that protects the earth from harmful wavelengths of solar ultraviolet radiation. Short-term exposure to ground-level ozone can cause a variety of respiratory health effects, including inflammation of the lining of the lungs, reduced lung function, and respiratory symptoms such as cough, wheezing, chest pain, burning in the chest, and shortness of breath. Ozone exposure can decrease the capacity to perform exercise. Exposure to ozone can also increase susceptibility to respiratory infection. Exposure to ambient concentrations of ozone has been associated with the aggravation of respiratory illnesses such as asthma, emphysema, and bronchitis, leading to increased use of medication, absences from school, doctor and emergency department visits, and hospital admissions. Short-term exposure to ozone is associated with premature mortality. Studies have also found that long-term ozone exposure may contribute to the development of asthma, especially among children with certain genetic susceptibilities and children who frequently exercise outdoors. Long-term exposure to ozone can permanently damage lung tissue (EPA 2016a).

Other health effects of ozone include:

- difficulty to breathe deeply and vigorously,
- shortness of breath and pain when taking a deep breath,
- coughing and sore or scratchy throat,
- inflammation and damage to the airways,
- aggravation of lung diseases such as asthma, emphysema, and chronic bronchitis,
- increased frequency of asthma attacks,
- increased susceptibility of the lungs to infection, and
- continued damage to the lungs even when the symptoms have disappeared (EPA 2021a).

Nitrogen Oxides

NO_x is a generic term for the mono-nitrogen oxides which include nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas and NO_2 is a reddish brown gas. NO_x is formed from fuel combustion under high temperature or pressure. NO_x is a primary component of the photochemical reaction that results on the formation of ozone. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_x decreases lung function and may reduce resistance to infection. Acute exposure to NO_2 may cause pulmonary edema, pneumonitis, and bronchitis. NO_2 is considered a relatively insoluble, reactive gas, such as phosgene and ozone. Once inhaled, NO_2 reaches the lower

respiratory tract, affecting mainly the bronchioles and the adjacent alveolar spaces, where it may produce pulmonary edema within hours (EPA 2016b).

Sulfur Oxides

Fossil fuel combustion by electrical utilities and industry is the primary source of sulfur dioxide (SO_2) in the United States. SO_2 emissions that lead to high concentrations of SO_2 in the air generally also lead to the formation of other SO_x. SO_x can react with other compounds in the atmosphere to form small particles. These particles contribute to particulate matter pollution. People with asthma are especially susceptible to the effects of sulfur dioxide. Short-term exposures of asthmatic individuals to elevated levels of sulfur dioxide while exercising at a moderate level may result in breathing difficulties, accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Studies also provide consistent evidence of an association between short-term sulfur dioxide exposures and increased respiratory symptoms in children, especially those with asthma or chronic respiratory symptoms. Short-term exposures to sulfur dioxide have also been associated with respiratory-related emergency department visits and hospital admissions, particularly for children and older adults (EPA 2017).

Particulate Matter

Particulate matter is a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles (liquid droplets or solids) over a wide range of sizes. Particles originate from a variety of man-made stationary and mobile sources, as well as from natural sources like forest fires. The chemical and physical properties of particulate matter vary greatly with time, region, meteorology, and the source of emissions (EPA 2020).

For regulatory purposes, EPA distinguishes between categories of particles based on size and has established standards for fine and coarse particles. PM_{10}, in general terms, is an abbreviation for particles with an aerodynamic diameter less than or equal to 10 micrometers (μm), and it represents inhalable particles small enough to penetrate deeply into the lungs (i.e., thoracic particles). PM_{10} is composed of a coarse fraction referred to as $PM_{10-2.5}$ or as thoracic coarse particles (i.e., particles with an aerodynamic diameter less than or equal to 10 μm and greater than 2.5 μm) and a fine fraction referred to as $PM_{2.5}$ or fine particles (i.e., particles with an aerodynamic diameter less than or equal to 2.5 μm). Thoracic coarse particles are emitted largely as a result of mechanical processes and uncontrolled burning. Important sources include resuspended dust (e.g., from cars, wind, etc.), industrial processes, construction and demolition operations, residential burning, and wildfires. Fine particles are formed chiefly by combustion processes (e.g.,

from power plants, gas and diesel engines, wood combustion, and many industrial processes) and by atmospheric reactions of gaseous pollutants (EPA 2020).

Although scientific evidence links harmful human health effects from exposures to both fine particles and thoracic coarse particles, the evidence is much stronger for fine particles than for thoracic coarse particles. Effects associated with exposures to both $PM_{2.5}$ and $PM_{10\text{-}2.5}$ include premature mortality, aggravation of respiratory and cardiovascular disease (as indicated by increased hospital and emergency department visits), and changes in sub-clinical indicators of respiratory and cardiac function. Such health effects have been associated with short- and/or long-term exposure to particulate matter. Exposures to $PM_{2.5}$ are also associated with decreased lung function growth, exacerbation of allergic symptoms, and increased respiratory symptoms. Children, older adults, individuals with preexisting heart and lung disease (including asthma), and persons with lower socioeconomic status are among the groups most at risk for effects associated with particulate matter exposures. Information is accumulating and currently provides suggestive evidence for associations between long-term $PM_{2.5}$ exposure and developmental effects, such as low birth weight and infant mortality resulting from respiratory causes (EPA 2019).

Lead

Historically, the primary source of lead emissions to the air was combustion of leaded gasoline in motor vehicles (such as cars and trucks), prior to the eradication of leaded gasoline in the United States in the mid-1990s. Since then, the remaining sources of lead air emissions have been industrial sources, including lead smelting operations, battery recycling operations, and piston-engine small aircraft that use leaded aviation gasoline. Lead accumulates in bones, blood, and soft tissues of the body. Exposure to lead can affect development of the central nervous system in young children, resulting in neurodevelopmental effects such as lowered IQ and behavioral problems (EPA 2021b).

Carbon Monoxide

Gasoline-fueled vehicles and other on-road and non-road mobile sources are the primary sources of CO in the United States. Exposure to CO reduces the capacity of the blood to carry oxygen, thereby decreasing the supply of oxygen to tissues and organs. Reduction in oxygen supply to the heart, in particular, causes critical complications. People with any heart disease already have a reduced capacity for pumping oxygenated blood to the heart, which can cause them to experience myocardial ischemia (reduced oxygen to the heart), often accompanied by chest pain (angina), when exercising or under increased stress. For these people, short-term CO exposure further affects their body's already compromised ability to respond to the increased oxygen demands of exercise or exertion.

Therefore, people with angina or heart disease are at the greatest risk from ambient CO. Other potentially at-risk populations include those with chronic obstructive pulmonary disease, anemia, diabetes, and those in prenatal or elderly life stages (EPA 2010).

4.3.1.3 Toxic Air Contaminants

Toxic air contaminants are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A wide range of sources, from industrial plants to motor vehicles, emit toxic air contaminants. Toxic air contaminants can be emitted directly and can also be formed in the atmosphere through reactions among different pollutants. This section and the Air Quality Assessment (Appendix D-1) focus on direct toxic air contaminant emissions that would be associated with project mining, production, and reclamation activities, not those formed in the atmosphere. Diesel particulate matter, respirable crystalline silica, and naturally occurring asbestos are toxic air contaminants of concern associated with proposed project sources and are specifically discussed below.

The health effects associated with toxic air contaminants are quite diverse and generally are assessed locally, rather than regionally. Toxic air contaminants can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term acute effects, such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches. For evaluation purposes, toxic air contaminants are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure. Non-carcinogenic substances differ in they are generally assumed to feature a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Acute and chronic exposure to non-carcinogens is expressed as a Hazard Index, which is the ratio of expected exposure levels to an acceptable reference exposure levels.

Toxic air contaminants are primarily regulated through state and local risk management programs. These programs are designed to eliminate, avoid, or minimize the risk of adverse health effects from exposures to toxic air contaminants. A chemical becomes a regulated toxic air contaminant in California based on designation by OEHHA. As part of its jurisdiction under Air Toxics Hot Spots Program (Health and Safety Code Section 44360(b)(2)), OEHHA derives cancer potencies and reference exposure levels for individual air contaminants based on the current scientific knowledge that includes consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with the mandate of the Children's

Environmental Health Protection Act (Senate Bill 25, Escutia, Chapter 731, Statutes of 1999, Health and Safety Code Sections 39669.5 et seq.).

Respirable Crystalline Silica

Respirable crystalline silica refers to crystalline silicon dioxide with aerodynamic diameter less than four microns (i.e., 0.0004 centimeters). Crystalline silica or quartz is ubiquitous in nature. Most dust generated by construction and mining activities including blasting produces dust particles larger than 4 microns. These particles are too large to reach the alveoli of the lungs which are the target organ. Thus, respirable crystalline silica constitutes a tiny fraction of the dust from these sources and does not represent a significant health risk to neighbors of these types of projects. To result in toxic effects the silica needs to be crystalline, smaller than 4 microns, inhaled, and not exhaled.

Inhalation of respirable crystalline silica initially causes respiratory irritation and an inflammatory reaction in the lungs. Silicosis results from chronic exposure; it is characterized by the presence of histologically unique silicotic nodules and by fibrotic scarring of the lung. Lung diseases other than cancer associated with silica exposure include silicosis, tuberculosis/silicotuberculosis, chronic bronchitis, small airways disease, and emphysema. Ambient air exposures do not cause concern but levels to which workers (e.g., miners, sandblasters) may be exposed have been shown to cause cancer.

Diesel Particulate Matter

Diesel particulate matter is used as a surrogate for the mixture of compounds in diesel exhaust that have the potential to contribute to mutations in cells which can lead to cancer. These compounds include, but are not limited to, arsenic, benzene, formaldehyde, and nickel.

Long-term exposure to diesel exhaust particles poses the highest cancer risk of any toxic air contaminant evaluated by OEHHA. The ARB has estimated that about 70% of the cancer risk that the average Californian faces from breathing toxic air contaminants stems from diesel exhaust particles. In a comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely than workers who were not exposed to diesel emissions to develop lung cancer. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated similar cancer risks from diesel exhaust as those calculated by OEHHA.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. People with allergies, existing cardiovascular disease, the elderly, and children considered sensitive populations for diesel particulate matter exposure. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Naturally Occurring Asbestos

In Fresno County, naturally occurring asbestos is another toxic air contaminant of concern. Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers, with principal forms including chrysotile, crocidolite, amosite, tremolite, actinolite, and anthophyllite (OEHHA 2000). Naturally occurring asbestos is found in some areas throughout California, most commonly where ultramafic rock or serpentinite rock is present. When construction activities occur in areas with naturally occurring asbestos in the soils or rock, the asbestos fibers can become airborne and may be inhaled, which can cause chronic local inflammation and disrupt orderly cell division, both of which can facilitate the development of asbestosis (a noncancerous lung disease involving fibrotic scarring of the lungs) and cancer (OEHHA 2000).

4.3.1.4 Regional Air Quality and Attainment Status

The determination of whether a region's air quality is healthful or unhealthful is made by comparing contaminant levels in ambient air samples to the state and federal ambient air quality standards. Table 4.3-1, "Ambient Air Quality Standards," summarizes current standards.

Both the ARB and EPA use monitoring station data to designate an area's attainment status with respect to the state and federal ambient air quality standards, respectively, for criteria air pollutants. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." The "unclassified" designation is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In the Basin, ozone (one-hour and eight-hour), PM_{10}, and $PM_{2.5}$ are designated as "nonattainment"; the remaining criteria pollutants are designated as "attainment" or "unclassified."

Table 4.3-1
Ambient Air Quality Standards

Pollutant	Average Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary*[3,4]	*Secondary*[3,5]
Ozone	1 hour	0.09 ppm (180 µg/m³)	—	Same as Primary Standard
	8 hours	0.070 ppm (137 µg/m³)	0.070 ppm (147 µg/m³)	
NO_2	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	Same as Primary Standard
	1 hour	0.18 ppm (339 µg/m³)	0.100 ppm (188 µg/m³)	
CO	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	None
	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	
SO_2	24 hours	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)	—
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
	3 hours	—	—	0.5 ppm (1300 µg/m³)
	1 hour	0.25 ppm (655 µg/m³)	0.075 ppm (196 µg/m³)	—
PM_{10}	24 hours	50 µg/m³	150 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m³	—	
$PM_{2.5}$	24 hours	No Separate State Standard	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	12.0 µg/m³	15.0 µg/m³
Lead[6]	30-day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m³	
Hydrogen sulfide	1 hour	0.03 ppm	—	—
Vinyl chloride	24 hours	0.01 ppm	—	—
Sulfates	24 hours	25 µg/m³	—	—

Pollutant	Average Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary[3,4]*	*Secondary[3,5]*
Visibility-reducing particles	8 hours (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer because of particles when the relative humidity is less than 70%	—	—

Table Source: California Air Resources Board 2016
Table Notes:
ppm = parts per million by volume.
μg/m^3 = micrograms per cubic meter.
mg/m^3= milligrams per cubic meter.

1. California standards for ozone, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter (PM_{10}, $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For NO_2 and SO_2, the standard is attained when the 3-year average of the 98th and 99th percentile, respectively, of the daily maximum 1-hour average at each monitor within an area does not exceed the standard (effective April 12, 2010). For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter (μg/m^3) is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr.
   Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm (parts per million) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

The Air District maintains ambient air quality monitoring stations throughout the Basin. Air pollutants monitored at each station may differ; thus, data from the closest representative station that monitors each pollutant is used as background concentrations for purposes of impact assessment. The closest ambient air quality monitoring station to the project site is the Clovis-Villa station (Air Quality Station ID 06-019-5001). This station is located approximately 9 miles south of the project sites and measures ozone, PM_{10}, $PM_{2.5}$, NO_2, CO, non-methane hydrocarbons, and speciated-VOCs. The station is constructed to monitor at a neighborhood scale covering an area between 0.5 and 4.0 kilometers in range. Data is collected for the purpose of observing the highest concentration of pollutants in the area (Air District 2020).

SO_2 is recorded at the Fresno–Garland station located approximately 12 miles south of the project sites. The station is constructed to monitor at neighborhood and urban scales covering an area between 0.5 and 50 kilometers in range (Air District 2019).

Ambient concentrations and number of days when the air quality standards were exceeded in the five-year period from 2013 through 2017 are presented in Table 4.3-2 below, "Ambient Air Quality in the Project Area," and Table 4.3-3 below, "Number of Days Exceeding Air Quality Standards." As shown in Tables 4.3-2 and 4.3-3, CO, SO_2, and NO_2 levels did not exceed state or federal standards during the five-year period. Ozone levels exceeded the state one-hour and eight-hour standards and the federal eight-hour standard each year of the five-year period. PM_{10} levels exceeded the 24-hour state standard for each year of the five-year period and the annual state standard for at least two years of the five-year period; the 24-hour federal standard was not exceeded. $PM_{2.5}$ levels exceeded the federal 24-hour standard for each year of the five-year period and met or exceeded the state and federal annual standards for at least two years of the five-year period.

Table 4.3-2
Ambient Air Quality in the Project Area

Concentration Averaging Period	Monitoring Station	Ambient Air Quality Standard	2013	2014	2015	2016	2017
OZONE							
Max. 1-hr.	Clovis North Villa Ave (Site No. 5001)	0.09 ppm (state)	0.123	0.118	0.116	0.113	0.138
Max. 8-hr.		0.070 ppm (state) 0.075 ppm (federal)	0.104	0.103	0.098	0.095	0.100
NITROGEN DIOXIDE							
Max. 1-hr.	Clovis North Villa Ave (Site No. 5001)	0.18 ppm (state) 0.100 ppm (federal)	0.054	0.059	0.059	0.049	0.0588
Annual		0.030 ppm (state) 0.053 ppm (federal)	ND	ND	0.010	ND	0.010
CARBON MONOXIDE							
Max. 1-hr.	Clovis North Villa Ave (Site No. 5001)	20 ppm (state) 35 ppm (fed.)	2.4	2.2	1.5	1.6	1.6
Max. 8-hr.		9.0 ppm (state) 9 ppm (federal)	1.7	1.4	1.8	1.3	1.2
RESPIRABLE PARTICULATE MATTER (PM_{10})							
Max. 24-hr.	Clovis North Villa Ave (Site No. 5001)	50 µg/m³ (state)	121.9	84.3	101.3	74.9	99.4
Max. 24-hr.		150 µg/m³ (federal)	119.0	82.3	105.3	76.2	103.2
Annual		20 µg/m³ (state)	ND	ND	33.7	32.7	ND
FINE PARTICULATE MATTER ($PM_{2.5}$)							
Max. 24-hr.	Clovis North Villa Ave (Site No. 5001)	35 µg/m³ (federal)	103.4	72.8	80.7	50.4	69.5
Annual		12 µg/m³ (state)	ND	ND	13.0	11.6	13.6
Annual		15.0 µg/m³ (federal)	15.9	16.6	15.0	12.5	13.7

Concentration Averaging Period	Monitoring Station	Ambient Air Quality Standard	2013	2014	2015	2016	2017
SULFUR DIOXIDE							
Max. 1-hr.	Fresno-Garland (Site No. 11)	0.075 ppm (federal) 0.25 ppm (state)	0.006	0.007	0.011	0.008	0.008
Max. 24-hr.		0.04 ppm (state) 0.14 ppm (federal)	0.003	0.003	0.002	0.002	0.002

Table Source: Sespe 2019.
Table Notes: Max. = maximum; ppm = parts per million; µg/m^3 = micrograms per cubic meter; ND—insufficient data available to determine.

Table 4.3-3
Number of Days Exceeding Air Quality Standards

Monitoring Site	Year	Days Exceeding State 1-Hour O_3	Days Exceeding State 8-Hour O_3	Days Exceeding Federal 8-Hour O_3	Days Exceeding State 24-Hour PM_{10}[1]	Days Exceeding Federal 24-Hour $PM_{2.5}$[1]
Clovis North Villa Ave.	2013	13	66	38	ND	25.1
	2014	26	84	56	ND	40.4
	2015	18	51	28	50.3	15.4
	2016	26	63	46	61.3	8.2
	2017	13	50	23	ND	25.4

Table Source: Sespe 2019.
Table Notes: ND—insufficient data available to determine; PM_{10} = particles with an aerodynamic diameter less than or equal to 10 micrometers; $PM_{2.5}$ = particles with an aerodynamic diameter less than or equal to 2.5 micrometers.
1. Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and 3 days, respectively. "Number of days exceeding the standards" are mathematical estimates.

4.3.2 Regulatory Setting

4.3.2.1 Federal

U.S. Environmental Protection Agency

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The U.S. EPA is responsible for implementing most aspects of the Clean Air Act, which include NAAQS for major air pollutants, performance standards for new and modified sources, hazardous air pollutant standards, approval of state attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions. NAAQS are established for "criteria pollutants" under the Clean Air Act, which are ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. NAAQS (other than for ozone, NO_2, SO_2, PM_{10}, and

$PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. Ozone, NO_2, SO_2, PM_{10}, and $PM_{2.5}$, are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires EPA to reassess NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated time frames. NAAQS are presented in Table 4.3-1 above.

Standards of Performance for Asphalt Hot-Mix Facilities

Standards of Performance for Asphalt Hot-Mix Facilities (40 CFR, Part 60, Subpart I) prohibits any new hot-mix asphalt facility from discharging gases that contain particulate matter in excess of 90 milligrams per dry standard cubic meter (mg/dscm) (0.04 grain per dry standard cubic foot [gr/dscf]) and/or exhibit 20% opacity or greater. EPA Test Method 5 is used to determine particulate matter concentration and outlines sampling methodology.

Standards of Performance for Nonmetallic Mineral Processing Plants

Standards of Performance for Nonmetallic Mineral Processing Plants (40 CFR, Part 60, Subpart OOO) is applicable to new, modified, or reconstructed nonmetallic mineral processing facilities (with certain exceptions, such as fixed sand and gravel plants and crushed stone plants with capacities of 25 tons per hour or less, or portable sand and gravel plants and crushed stone plants with capacities of 150 tons per hour or less). Subpart OOO includes different requirements for facilities that commence construction, modification, or reconstruction after August 31, 1983, and after April 22, 2008; the requirements for the latter date are described. Subpart OOO includes particulate matter standards, as well as monitoring, testing, reporting, and recordkeeping requirements. Within 60 days after reaching maximum production rate, but no later than 180 days after initial startup, Subpart OOO restricts emissions from affected facilities equipped with capture systems used to capture and transport particulate matter to a control device. Emissions are prohibited in excess of 0.032 grams per dry standard cubic meter (0.014 grams per dry standard cubic foot), and from exhibiting visible emissions based on quarterly monitoring. Subpart OOO also prohibits the discharge of any fugitive emissions from affected facilities without capture systems and fugitive emissions escaping capture systems that exhibit greater than 7% opacity (12% for crushers without capture systems).

Regulations Affecting New Diesel Engines

EPA regulates emissions from new non-road (i.e., off-road, portable, and stationary) internal combustion engines by tiered standards (e.g., compression-ignition engines in 40 CFR 89.112, 40 CFR 1039.101, and 40 CFR 1039.102). Emissions from new on-road engines are regulated using standards that apply by model year, class of vehicle, and fuel type (e.g., heavy-heavy duty diesel engines in 40 CFR 86.004-11, 40 CFR 86.007-11, and 40 CFR 86.099-11). These regulations affect manufacturers but are relevant to the proposed project because diesel engines are the primary source of proposed project combustion emissions.

4.3.2.2 State

California Air Resources Board

The Clean Air Act delegates the regulation of air pollution control and the enforcement of NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to the ARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. The ARB is responsible for ensuring implementation of the California Clean Air Act and the federal Clean Air Act and regulating emissions from motor vehicles, mobile equipment, and consumer products. The ARB also sets health-based air quality standards and control measures for toxic air contaminants. The ARB has established CAAQS, which are generally more restrictive than NAAQS. CAAQS describes adverse conditions (i.e., pollution levels must be below these standards before a basin can attain the standard). CAAQS for ozone, CO, SO_2 (1 hour and 24 hours), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. NAAQS and CAAQS are presented in Table 4.3-1 above.

Toxic Air Contaminant Identification and Control Act

California's comprehensive air toxics program was established in the early 1980s. The Toxic Air Contaminant Identification and Control Act (AB 1807, 1983) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987) requires a Statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

Under AB 1807, the ARB is required to use certain criteria when prioritizing pollutants for control of air toxics. In selecting substances for review, the ARB must consider criteria relating to "the risk of harm to public health, amount or potential amount of emissions, manner of, and exposure to, usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community." AB 1807 also requires the ARB to use available information gathered from the AB 2588 program to include in the

prioritization of compounds. The list of toxic air contaminants includes all Federal hazardous air pollutants plus the following pollutants: 1,2-dibromoethane, 1,2-dichloroethane, hexavalent chromium, cadmium, inorganic arsenic, nickel, inorganic lead, diesel particulate matter, and environmental tobacco smoke (17 CCR Section 93000 and Section 93001).

Under AB 2588, industrial facilities are required to report air toxic emissions, ascertain health risks and notify nearby residents of significant risks. In September 1992, the Hot Spots Act was amended by Senate Bill 1731, which required facilities that pose a significant health risk to reduce their risk through a risk management plan. The emissions inventory and risk assessment methodologies from the AB 2588 Program are used in the Air Quality Assessment (Appendix D-1) as discussed below in Section 4.3.3.3, "Analysis Methodology."

Idling of Commercial Heavy-Duty Trucks

In January 2005, the ARB adopted an Airborne Toxic Control Measure (ATCM) to control emissions from idling trucks. The ATCM, which became effective February 1, 2005, prohibits idling for more than 5 minutes for all diesel-fueled commercial motor vehicles with a gross vehicular weight ratings over 10,000 pounds that are or must be licensed for operation on highways. The ATCM contains several exceptions that allow trucks to idle during the following periods: due to traffic conditions, for vehicle inspections, and when queueing. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling (ARB 2020).

In-Use Off-Road Diesel-Fueled Fleets

In July 2007, the ARB adopted the Regulation for In-Use Off-Road Diesel-Fueled Fleets (Off-Road Diesel Regulation) to reduce particulate matter and NO_X emissions from existing off-road heavy-duty diesel vehicles in California. This regulation requires that specific fleet average requirements are met for NO_X emissions and for particulate matter emissions. Where average requirements cannot be met, Best Available Control Technology (BACT) requirements apply. All self-propelled off-road diesel vehicles 25 horsepower (hp) or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the Off-Road Diesel Regulation. This includes vehicles that are rented or leased (rental or leased fleets).

The Off-Road Diesel Regulation:

- requires all vehicles be reported to the ARB and labeled,
- restricts the adding of older vehicles into fleets starting on January 1, 2014,

- requires fleet owners to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (VDECS) i.e., exhaust retrofits,
- imposes limits on idling and requires a written idling policy, and
- requires a disclosure when selling vehicles.

All fleets must meet emission performance and reporting requirements by January 1, 2028. Annual reporting requirements, including the Responsible Official Affirmation of Reporting form, must be completed by March 1, 2028. Large fleets must report annually from 2012 to 2023, medium fleets from 2016 to 2023, and small fleets from 2018 to 2028. For each annual reporting date, a fleet must report any changes to the fleet, hour meter readings (for low-use vehicles and vehicles used a majority of the time, but not solely, for agricultural operations), and also must submit the Responsible Official Affirmation of Reporting (ROAR) form. Following January 1, 2023, small fleets may no longer add a vehicle with a Tier 2 engine to its fleet. The engine tier must be Tier 3 or higher. Medium and large fleets may not add tier 2 engines as of January 1, 2018. The goal of the In-Use Off-Road Diesel-Fueled Fleets Regulation is to reduce particulate matter and NO_x emissions from in-use (existing) off-road heavy-duty diesel vehicles in California (ARB 2020).

In-Use On-Road Diesel-Fueled Vehicles

On December 12, 2008, the ARB adopted an ATCM to reduce NO_x and particulate matter emissions from most in-use on-road diesel trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. This regulation affects individuals, private companies, and Federal agencies that own diesel vehicles with a Gross Vehicle Weight Rating (GVWR) greater than 14,000 lbs. that operate in California. The regulation also applies to publicly and privately owned school buses; however, their compliance requirements are different, and reporting is not required. The regulation does not apply to state and local government vehicles and public transit buses because they are already subject to other regulations. Vehicles that are exempt from other heavy duty diesel regulations, such as Cargo Handling Equipment, Drayage Truck, and Solid Waste Collection Vehicle regulations, may be subject to the Truck and Bus Regulation (regulation). Drayage and solid waste collection trucks with 2007 to 2009 model year engines must meet the requirements of the regulation by January 1, 2023.

Heavier trucks and buses with a GVWR greater than 26,000 pounds must comply with a schedule by engine model year or owners can report to show compliance with more flexible options. All heavier vehicles with 1996 or newer model year engines should have

a particulate matter filter (OEM or retrofit). By January 1, 2023, all trucks and buses must have 2010 model year engines with few exceptions.

Lighter trucks and buses with a GVWR of 14,001 to 26,000 lbs. have replacement requirements starting January 1, 2015. The Engine Model Year Schedule for Lighter vehicles shown in the table to the right lists the compliance dates by engine model year for existing lighter trucks. Starting January 1, 2015, lighter vehicles with engines that are 20 years or older must be replaced with newer trucks (or engines). Starting January 1, 2020, all remaining vehicles need to be replaced so that they all have 2010 model year engines or equivalent emissions by January 1, 2023 (California Air Resources Board 2020).

4.3.2.3 Local

San Joaquin Valley Air Pollution Control District

The 1976 Lewis Presley Air Quality Management Act established the San Joaquin Valley Air Pollution Control District and other air districts throughout the state. The Federal Clean Air Act Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the Federal standards in nonattainment areas of the state.

The ARB coordinates and oversees both state and federal air pollution control programs in California. The ARB oversees activities of local air districts and is responsible for incorporating air quality management plans developed by each air district into the State Implementation Plan (SIP) for Federal EPA approval. The ARB maintains air quality monitoring stations throughout the state in conjunction with local air districts. Data collected at these stations are used by the ARB and EPA to classify areas as "attainment" or "nonattainment" with respect to each pollutant and to monitor progress towards attaining air quality standards. ARB has divided the state into 15 air basins. Significant authority for air quality control is delegated to local air districts that regulate emissions from stationary sources and develop attainment plans. In addition, the California Clean Air Act provides the local air districts with the authority to manage transportation activities and regulate stationary source emissions. Indirect sources of pollution are those sources related to a stationary facility or development project but otherwise outside air district authority to regulate. An example of this would be the motor vehicles at an intersection, a mall, and on highways. As a state agency, the ARB regulates motor vehicles and fuels for their emissions.

The Air District and Fresno Council of Governments are responsible for formulating and implementing the air quality and transportation plans for the Fresno County area of the Basin. The Air District has adopted several attainment plans to achieve state and federal air quality standards. The Air District continuously monitors the region's progress

implementing attainment plans and periodically reports to the ARB and the EPA. Finally, the Air District periodically revises attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the California Clean Air Act and associated amendments.

Attainment Plans

Attainment plans relevant to the proposed project are summarized below.

Ozone Attainment Plans:

- **2004 Extreme 1-Hour Ozone Attainment Demonstration Plan**. This Plan, adopted by the Air District in 2004, sets forth measures and emission reduction strategies designed to attain the Federal 1-hour ozone standard by November 15, 2010. This Plan was approved by the EPA on March 8, 2010; however, the EPA's approval was subsequently withdrawn effective November 26, 2012, in response to a decision issued by the U.S. Court of Appeals for the Ninth Circuit (Sierra Club v. U.S. E.P.A., (9th Cir. 2012) 671 F.3d 955) remanding EPA's approval of these State Implementation Plan revisions. Concurrent with EPA's final rule, the ARB is withdrawing the Plan. On May 6, 2014, the Air District submitted a formal request to the U.S. EPA, asking that the EPA determine the Basin has attained the Federal 1-hour ozone standard which was revoked in 1997.
- **2007 8-Hour Ozone Plan**. This Plan sets forth measures and a "dual path" strategy to attain the Federal 8-hour ozone standard in the Basin by reducing emissions of ozone and particulate matter precursors. The Plan includes provisions that improve pollution control technologies for mobile and stationary sources, and Federal funding for incentive- based measures that reduce emissions. Local measures were to be adopted by the Air District before 2012. This Plan was approved by the EPA on March 1, 2012. On November 26, 2012, however, the EPA withdrew its determination that the Plan satisfied the Clean Air Act requirements due to emission growth caused by growth in vehicle-miles traveled (VMT). Other determinations in the EPA's March 1, 2012 rule approving the Plan remain unchanged and in effect.
- **2016 Ozone Plan for 2008.** 8 Hour Ozone Standard. In order to meet the December 31, 2031 deadline for attainment, this plan incorporates emissions reduction strategies for stationary sources including regulatory actions; incentive programs; technology advancement programs; policy and legislative activities; public outreach, education, and communication; and undefined strategies under "black box" provisions. The Plan

demonstrates that existing regulations go above and beyond the Federal Reasonably Available Control Technology (RACT) requirement. The Plan also emphasizes that mobile source emissions, which fall under state and federal jurisdiction, make up over 85% of the Valley's NO_x emissions. For this reason, the District request that the ARB and EPA adopt and implement strategies so that sources outside District authority would be controlled enabling the standard to be met without the need for "black box" provisions. Moreover, the plan states that the ARB and EPA action will be essential to attain the state and federal air quality standards.

Particulate Matter Attainment Plans:

- **2007 PM_{10} Maintenance Plan.** On October 25, 2007, the ARB approved the 2007 PM_{10} Maintenance Plan and Request for Re-designation with modifications to the transportation conformity budgets. On September 25, 2008, the EPA approved the PM_{10} maintenance plan.
- **2008 $PM_{2.5}$ Plan**. The EPA set the first $PM_{2.5}$ standard in 1997 and in 2005 designated the Valley as nonattainment for the 1997 standard. The 1997 standard has two metrics for attainment: an annual average of 15 $\mu g/m^3$ and a 24- hour average of 65 $\mu g/m^3$. The Air District adopted the 2008 $PM_{2.5}$ Plan in April 2008 to demonstrate how the Valley would come into attainment of the 1997 $PM_{2.5}$ standard by no later than April 2015. EPA subsequently lowered the 24-hour standard to 35 $\mu g/m^3$ in 2006 and re-issued the nonattainment designation for the Valley in 2009.

  The 2008 Plan is designed to assist the Basin in attaining each $PM_{2.5}$ standard, including the ones adopted by EPA in 1997 and 2006, and the state standard. On July 13, 2011, the EPA issued a proposed rule partially approving and disapproving the 2008 $PM_{2.5}$ Plan. Subsequently, on November 9, 2011, the EPA issued a final rule approving most of the Plan with an effective date of January 9, 2012. However, the EPA disapproved the plan's contingency measures because they would not provide sufficient emission reductions.
- **2012 $PM_{2.5}$ Plan**. The 2012 $PM_{2.5}$ Plan builds on the prior $PM_{2.5}$ plans and demonstrates attainment of the newer 2006 24-hour $PM_{2.5}$ standard by the Federal attainment deadline of 2019, with the majority of the Valley actually experiencing attainment before 2019. Using the Air District Governing Board's guiding principles adopted in February 2012, this plan emphasizes public health as the number one priority in meeting NAAQS.

The 2012 $PM_{2.5}$ Plan is a multifaceted strategy that utilizes a combination of conventional and innovative control strategies to reduce emissions of $PM_{2.5}$ and other pollutants that form $PM_{2.5}$. The Air District's successes in adopting regulations and other strategies that have improved air quality provide the foundation for the Plan. In developing the Plan, the Air District claims to have left "no stone unturned" in evaluating potential strategies to reduce emissions.

In addition to reducing direct emissions of $PM_{2.5}$, the 2012 $PM_{2.5}$ Plan focuses on reducing oxides of nitrogen (NO_x) emissions, which is a predominant pollutant not only in the formation of $PM_{2.5}$ but also ozone. This overlapping effect and emphasis on reducing NO_x emissions addresses the area's primary air quality challenges, $PM_{2.5}$ and ozone. Along with comprehensive efforts at the local level to reduce emissions, reducing mobile source emissions that are not under the direct authority of the Air District are critical to attaining the standard. The 2012 $PM_{2.5}$ Plan includes state and federal measures that will provide significant new emissions reductions in the coming years. As outlined below, the Plan's comprehensive control strategy includes regulatory actions, incentive programs, technology advancement, policy and legislative positions, public outreach, participation and communication, and additional strategies.

- **2015 Plan for the 1997 $PM_{2.5}$ Standard**. The 2015 Plan for the 1997 $PM_{2.5}$ Standard was adopted on April 16, 2015, and addresses the EPA annual $PM_{2.5}$ standard of 15 μg/m3 as well as the EPA 24-hour $PM_{2.5}$ standard of 65 μg/m3 both of which were established in 1997. The plan's strategy focuses on attaining the standard quickly, as well as prioritizing $PM_{2.5}$ emissions that pose the most health risk to residents.
- **2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard**. The 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted by the District on September 15, 2016. This Plan addresses the $PM_{2.5}$ NAAQS of 12 μg/m3 with an attainment deadline of December 31, 2021, established in 2012. This Plan demonstrates the impracticability of attainment before the deadline and requests the area be reclassified from moderate to serious nonattainment.
- **2018 Plan for the 1997, 2006 and 2012 $PM_{2.5}$ Standards**. Adopted on November 15, 2018, the plan includes significant incentive based control measures as well as control measures for stationary and area industrial sources. The plan also calls on the ARB to act in order to achieve reductions of mobile sources.

- **SB 656 Particulate Matter Control Measure Implementation Schedule**. Senate Bill (SB) 656 was enacted in 2003 and codified as Health and Safety Code Section 39614. SB 656 seeks to reduce exposure to PM_{10} and $PM_{2.5}$ and make further progress toward attainment of the NAAQS and CAAQS for PM_{10} and $PM_{2.5}$. SB 656 required the California Air Resources Board, in consultation with local air districts, to develop and adopt lists of "the most readily available, feasible, and cost-effective" particulate matter control measures. Subsequently, air districts were required to adopt implementation schedules for relevant control measures. In June 2005, The Air District adopted its SB 656 Particulate Matter Control Measure Implementation Schedule and has adopted each relevant strategy into their rules.

Rules and Regulations

The Air District establishes and administers a program of rules and regulations to attain and maintain state and national air quality standards and regulations related to toxic air contaminants. Rules and regulations that may apply to the proposed project during construction and/or operations include the following:

- **Regulation I (General Provisions)**
  - **Rule 1160 (Emission Statements)**

    Rule 1160 requires owners/operators of stationary sources that emit NO_x or ROG to submit annual emission inventories. More information can be found in the Air Resources Board's "Instructions for the Emission Data System Review and Update Report" document.
- **Regulation II (Permits)**
  - **Rule 2010 (Permits Required)**

    Rule 2010 requires newly proposed non-exempt sources of emissions to obtain an Authority to Construct prior to construction. Prior to operation of the new source, the Air District also requires that a Permit to Operate be obtained. Permits to Operate must be posted and maintained on or near the source of the air pollution.
  - **Rule 2201 (New and Modified Stationary Source Review)**

    Rule 2201, last amended April 2023, establishes Air District's program to limit emissions at new and modified sources so that there is no net increase in emissions within the Basin. Rule 2201 uses BACT and mechanisms such as emissions offsets, to ensure that AAQS are met or maintained. Criteria pollutants are regulated under this rule, including VOC, NO_x, SO_x, PM_{10},

$PM_{2.5}$, and CO. Under Rule 2201, BACT is required if the emissions of a regulated pollutant would exceed two (2) pounds per day. In addition, emission offsets to mitigate an increase in emissions from a new or modified stationary source would be required if the facility's emissions exceed the following amounts:

- 20,000 pounds per year of NO_x or VOC;
- 200,000 pounds per year of CO;
- 54,750 pounds per year of SO_x; or
- 29,200 pounds per year of PM_{10}.

– **Rule 2280 (Portable Equipment Registration)**

Rule 2280 outlines the procedure and requirements associated with the registration of portable emissions units. Sand and gravel screening, rock crushing, and RAP crushing operations are among operations eligible for registration of portable equipment, if a portable diesel-fired engine will be used to power processing equipment. Rule 2280 would be applicable to the project if temporary construction requires equipment (such as a generator set) under Rule 2280.

– **Rule 2530 (Federally Enforceable Potential to Emit)**

The purpose of Rule 2530, last amended in June 2024, is to restrict a facility's potential to emit so that the facility may be exempt from the requirements of Rule 2520 (Federally Mandated Operating Permits). This Rule applies to the following sources:

- Major air toxics sources;
- Any stationary source that emits or has the potential to emit 100 tons per year of any air contaminant;
- Any major source;
- Any emissions unit;
- Any emissions unit, including an area source, subject to a standard or other requirement promulgated pursuant to Section 111 (NSPS) or 112 (HAPs) of the CAA published after July 21, 1992;
- Any source required to have a preconstruction review permit pursuant to the requirements of the prevention of significant deterioration (PSD) program under Title I of the Federal Clean Air act; and,
- Any source in a source category designated, pursuant to 40 CFR Part 70.3, by rule of the EPA

Rule 2530 also includes recordkeeping and reporting requirements. Rule 2530 allows facilities to be excluded from the Title V program (see Rule 2520) by taking limits or keeping records to demonstrate that their emissions are below the applicable thresholds. This process is also referred to as a "synthetic minor" or Federally Enforceable State Operating Permit (FESOP).

- **Regulation III (Fees)**

  Regulation III contains rules related to District fees. The project may be subject to fees related to permitting, air toxics, dust, ozone, as well as others.

- **Regulation IV (Prohibitions)**
  - **Rule 4001 (New Source Performance Standards)**

    Rule 4001 codifies the Air District's adoption and incorporation of Federal New Source Performance Standards (NSPS) as set forth in 40 CFR Part 60. NSPS apply to a variety of stationary sources, including asphalt plants and aggregate processing plants. The regulation imposes emissions standards for relevant pollutants and requires that specified emission performance standards, control equipment, and monitoring devices be installed at all new, modified, or reconstructed facilities to limit emissions. The regulation includes test methods, monitoring, notification, and recordkeeping requirements. The asphalt plant and aggregate plant are subject to 40 CFR Part 60, Subparts I and OOO, respectively; those regulations are discussed in previous sections.

  - **Rule 4101 (Visible Emissions)**

    Rule 4101 prohibits emissions of visible air contaminants, other than water vapor, from resulting in greater than Number 1 on Ringelmann Chart (i.e., 20% opacity) for a combined period of more than 3 minutes in any hour.

  - **Rule 4102 (Nuisance)**

    To protect public health, Rule 4102 prohibits any person from discharging such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance to a considerable number of persons or to the public.

  - **Rule 4201 (Particulate Matter Concentration)**

    Rule 4201 establishes a particulate matter concentration standard governing release or discharge of dust, fumes, or total suspended particulate matter emissions into the atmosphere from any single-source operation exceeding 0.1 grains/dry standard cubic foot of gas (gr/dscf).

- **Rule 4202 (Particulate Matter Emission Rate)**

  Rule 4202 limits the weight rate of particulate matter emissions. The Rule specifies allowable emissions rates based on a process weight rate equation and calculations for various rates in an associated table within the rule.

- **Rule 4301 (Fuel Burning Equipment)**

  Rule 4301 limits the emission of air contaminants from fuel burning equipment. Included in this rule are requirements that fuel burning equipment not discharge:

  - combustion contaminants exceeding 0.1 gr/dscf at 12% carbon dioxide;
  - Discharge greater than 200 lbs. per hour of sulfur compounds;
  - Discharge greater than 140 pounds per hour of nitrogen compounds; or,
  - Discharge greater than 10 pounds per hour of combustion contaminants.

- **Rule 4307 (Boilers, Steam Generators, and Process Heaters)**

  Rule 4307 establishes NO_x and CO emissions limits for boilers, steam generators, and process heaters. This rule applies to units fired on gaseous or liquid fuel, having heat input of between 2.0 and 5.0 million British thermal units per hour (MMBtu/hr) or greater. The applicable limits for new units are 9 ppmv NO_x at 3% oxygen and 400 ppmv CO at 3% oxygen. The rule includes monitoring and recordkeeping requirements. Compliance with the emission limits must be determined by periodic source testing. This rule applies to the hot oil heater in the asphalt plant.

- **Rule 4309 (Dryers, Dehydrators, and Ovens)**

  Rule 4309 establishes NO_x and CO emissions limits for dryers, dehydrators, and ovens. This Rule applies to units fired on gaseous or liquid fuel, having a total rated heat input of 5.0 MMBtu/hr. or greater. The applicable limits for burners at asphalt plants are 4.3 ppmv NO_x at 19% oxygen and 42 ppmv CO at 19% oxygen when fired on gaseous fuel. The Rule includes monitoring and recordkeeping requirements.

  Compliance with the emission limits must be determined by periodic source testing or an approved alternate emissions monitoring system.

- **Regulation VIII (Fugitive PM_{10} Prohibitions)**

  The rules under Regulation VIII are intended to reduce ambient concentrations of particulate matter (PM_{10} or larger) and were developed pursuant to EPA guidance for Serious PM_{10} Nonattainment Areas. These rules are applicable to

specified anthropogenic sources. Applicability of each rule is discussed below, and requirements are presented for rules that apply to the project. Rule 8081 is omitted because it only applies to agricultural sources.

- **Rule 8021 (Construction, Demolition Excavation, Extraction, and Other Earthmoving Activities)**

  Rule 8021 prohibits construction, demolition, excavation, extraction, or other earthmoving activities unless the appropriate requirements are sufficiently implemented to limit visible dust emissions (VDE) to 20% opacity. Blasting emissions are exempt from this rule.

- **Rule 8031 (Bulk Materials)**

  Rule 8031 requires facilities that perform outdoor handling, storage, and transport of bulk materials to use prescribed methods to limit VDE to 20% opacity or to comply with the conditions for a stabilized surface as defined in Rule 8011 (General Requirements). Methods to limit VDE listed in Rule 8031 include:

  - Applying water or chemical/organic stabilizers/suppressants;
  - Constructing and maintaining sufficient barriers to obstruct wind;
  - Maintaining stabilized surfaces on piles; covering bulk materials with tarps, plastic, or other suitable material; limiting on-site vehicle speed;
  - Loading haul trucks to limit VDE;
  - Applying water on the top of loads to limit VDE;
  - covering haul trucks with tarps or other covers to limit VDE; and
  - Maintaining haul trucks to prevent spillage or loss of bulk materials.

- **Rule 8041 (Carryout and Trackout)**

  The purpose of Rule 8041 is to prevent or limit fugitive dust emissions from carryout and trackout on paved public roads or the paved shoulders of paved public roads. Facilities subject to Rules 8021, 8031, 8061, or 8071 must also comply with this rule. Rule 8041 requires that affected facilities prevent and/or clean up carryout and trackout at the end of each workday. Cleanup of carryout and trackout is accomplished by manually sweeping and picking up, operating a rotary brush or broom accompanied by sufficient wetting to limit VDE to 20% opacity, operating a PM_{10}-efficient street sweeper that has a pick- up efficiency of at least 80%, or flushing with water if curbs and gutters are not present and where the use of water will not result in a source of trackout material or other adverse impacts, such as a water quality violation under the National Pollutant Discharge Elimination

System program. Rule 8041 requires that owners/operators of sites with paved interior roads use a trackout control device to reduce carryout and trackout. Rule 8041 prohibits the use of blower devices, dry rotary brushes, or brooms for removal of carryout and trackout on public roads.

- **Rule 8051 (Open Areas)**

  The purpose of Rule 8051 is to limit fugitive dust emissions from open areas. The rule applies to open areas 0.5 acre or more within urban areas, and 3.0 acres or more within rural areas, that contain at least 1,000 square feet of disturbed surface area. Whenever open areas are disturbed or vehicles are used in open areas, control measures are required to comply with the conditions of a stabilized surface and to limit VDE to 20% opacity. Control measures to be used include: applying and maintaining water or other chemical dust suppressants to unvegetated areas; establishing vegetation on previously disturbed areas; or paving, applying, and maintaining gravel. Where evidence is acquired that open areas are disturbed due to trespassing, such activities should be prevented by posting "No Trespassing" signs or installing physical barriers such as fences.

- **Rule 8061 (Paved and Unpaved Roads)**

  The purpose of Rule 8061 is to limit fugitive dust emissions from paved and unpaved roads by implementing control measures and design criteria. This rule applies to any new or existing public or private paved or unpaved roads, road construction projects, and road modification projects. Rule 8061 requires that new or modified paved roads have certain specifications based on the road's existing or projected annual average daily trips (AADT). Requirements include minimum paved or stabilized shoulder widths, as well as curbing, intersection, and median specifications. The Rule prescribes requirements for maintenance of public paved roads, including specifications for PM_{10}-efficient sweepers and road cleanup. Rule 8061 requires unpaved road segments with 26 or more AADT to stabilize surfaces by application of water, chemical dust suppressant, washed gravel, or similar measures. Unpaved roads with fewer than 26 AADT are exempt from some requirements of this rule.

- **Rule 8071 (Unpaved Vehicle/Equipment Traffic Areas)**

  This rule limits fugitive dust emissions from unpaved vehicle and equipment traffic areas with 50 or more AADT by stabilizing road surfaces with water, chemical dust suppressant, washed gravel, or similar measures.

Unpaved vehicle and equipment traffic areas with less than 50 AADT are exempt from Rule 8071.

Air District CEQA Air Quality Analysis and Modeling Guidance

The Air District has developed CEQA air quality analysis and modelling guidance, but notes that this guidance is dated and may not be the best approach if one is trying to use currently accepted methods such as those employed by OEHHA (Air District 2012). For this reason, the Air Quality Assessment (Appendix D-1) is written based on the Air Toxics Hotspots Program Guidance Manual for the Preparation of Risk Assessments (OEHHA 2015).

Voluntary Emissions Reduction Agreement (VERA) Program

The Air District creates VOC, NO_x, and PM_{10} emissions reductions by providing incentive funding primarily to owners of engines who volunteer to replace older, high polluting engines with lower emitting alternatives (e.g., new engine, electric/battery, etc.). Emissions reductions administered by the Air District satisfy requirements for banking emissions reduction credits under Rule 2301 insofar as the emissions reductions are real, surplus, permanent, quantifiable, and enforceable. Some of the funding for these projects comes from VERAs between the Air District and developers of land use projects that require additional mitigation of these pollutants in order to reduce their project emissions impacts to less than the significance thresholds in the associated CEQA document (e.g., EIR). Section 9.2 in the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) (Air District 2015) states:

> *"Design elements, mitigation measures, and compliance with District rules and regulations may not be sufficient to reduce project - related impacts on air quality to a less than significant level. In such situations, project proponents may enter into a Voluntary Emission Reduction Agreement (VERA) with the District to reduce the project related impact on air quality to a less than significant level. A VERA is a mitigation measure by which the project proponent provides pound - for - pound mitigation of air emissions increases through a process that funds and implements emission reduction projects. A VERA can be implemented to address impacts from both construction and operational phases of a project.*
>
> *To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds to the District. The District's role is to administer the implementation of the VERA consisting of identifying emissions reductions projects, funding those projects and verifying that emission reductions have been successfully achieve. The VERA implementation process also provides opportunity for the project proponent to identify*

specific emission reduction projects to be administered by the District. The funds are disbursed by the District in the form of grants. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy - duty trucks with new, cleaner, more efficient heavy - duty trucks, and replacement of old farm tractors.

The District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. The initial agreement is generally based on the projected maximum emissions increases as calculated by a District approved air quality impact assessment, and contains the corresponding fiscal obligation. However, the District has designed flexibility into the VERA such that the final mitigation can be based on actual emissions related to the project as determined by actual equipment used, hours of operation, etc. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project specific emissions have been mitigated to less than significant. [Underline added].

To ensure all feasible mitigation measures are incorporated into the project to reduce project air quality impact to less than significant, the District recommends the project proponent (and/or Lead Agency) engage in discussion with the District to have the VERA adopted by the District prior to the finalization of the environmental document. This process will allow the environmental document to appropriately characterize the project emissions and demonstrate that the project impact on air quality will be mitigated to less than significant under CEQA as a result of the implementation of the adopted VERA.

The District has been developing and implementing VERA contracts with project proponents to mitigate project specific emissions since 2005. It is the District's experience that implementation of a VERA is a feasible mitigation measure, which effectively achieves the emission reductions required by a Lead Agency, including mitigation of project-related impacts on air quality by supplying real and contemporaneous emissions reductions.

Therefore, Lead Agencies should require the project proponent to negotiate a VERA with the District prior to the Lead Agency's final approval of the CEQA document. This allows the Lead Agency to disclose to the public the certainty that the VERA is assuring full mitigation of air quality impacts as specified in the environmental review document or equivalent documentation certified by the Lead Agency. The 2017 Annual Financial Report states:

Under a VERA, two mitigation approaches are available: "pollutant-by-pollutant" and "net zero". The mitigation of project emissions impacts "pollutant-by-pollutant" means that each NO_x, VOC and PM_{10} project emission will be mitigated individually to their respective significance threshold level. The mitigation of project emissions impacts to "net zero" means that the sum of NO_x, VOC and PM_{10} combined project emissions will be fully mitigated by the sum of NO_x, VOC and PM_{10} combined emission reductions achieved under the VERA. The "net zero" concept is limited to the three pollutants NO_x, VOC and PM_{10}, due to their strong interrelatedness. NO_x is the driving pollutant for both the wintertime particulate matter problem and the summertime ozone problem (in combination with VOC). The District considers "net zero" mitigation to result in a less than significant air quality impact for these three pollutants, even if VOC or PM_{10} emissions remain above their individual significance thresholds after mitigation, because this means that the mitigation has achieved excess reductions of NO_x, the critical component to the Valley's air quality issues. [Underline added].

The District strongly recommends the "net-zero" approach. This method results in a significantly larger amount of NO_x reduction, which is the primary driver to the formation of ozone and particulate matter in the Valley."

The 2017 Financial Report describes the amount of funding and emissions reductions that have occurred in the VERA Program and during the last year as follows:

"The District has entered into thirty-two VERAs since 2005. One hundred percent (100%) of all off-site mitigation fees are used by the District to fund emission reduction projects through its Incentives Programs, achieving emission reductions on behalf of the project. Additionally, developers pay an administrative fee equal to four percent (4%) of the required off-site fees. This fee is to cover the District's cost of administering the off-site emission reduction projects.

To date, in addition to avoiding approximately 12,500 tons of NO_x and PM_{10} emissions from new development through the incorporation of on-site mitigation and clean-air design measures into projects subject to Rule 9510, the District has confirmed approximately 6,900 tons of reductions in NO_x and PM_{10} emissions have been achieved through the investment of ISR and VERA funds in its emission reduction incentive programs.

This year the District achieved emission reductions totaling 501 tons NO_x and 102 tons PM_{10}, for a combined total of 603 tons at a cost effectiveness of $ 8,123 per ton of emissions reduced."

Based on language in recent Governing Board approved VERAs, an applicant can propose to pre-pay for potential excess emissions of NO_x, VOC, and/or PM_{10} (i.e., "criteria pollutants") should emissions from permit-exempt, mobile sources be found to be significant even with the implementation of all feasible mitigation measures. Similarly, permitted, stationary sources would purchase emissions credits if they exceed applicable significance thresholds except that the emissions reductions would need to have been banked by another facility and issued certificates by the Air District as emissions reduction credits under the Air District District's stationary source permitting program.

Applicants that enter a VERA may pay up-front for potential excess emissions predicted for the entire project; or for shorter periods called "project phases." Project phases as short as three months or long as one year have been allowed in VERAs with the choice of duration left to the Applicant's discretion. Project phases in context of a VERA are periods for which emissions are pre-paid and after which the actual excess emissions above the significance thresholds may be calculated by the Applicant and reconciled with the amount of emissions reductions achieved by the District with Applicant funds. If actual emissions during a project phase were less than the significance thresholds in the environmental document, then the emissions reductions purchased would roll-over to serve as a pre-payment for a future project phase. If actual emissions exceed one or more significance thresholds, then pre-paid emissions reductions equal to the actual excess project emissions for each pollutant would be deducted from the amount of emissions reductions achieved by the District. The remaining reductions achieved by the District after subtracting the actual excess emissions above the significance threshold would then roll-over to a future project phase. Alternatively, the Applicant may transfer emissions reductions to another project within the District that requires mitigation of emissions impacts under CEQA.

The proposed project is well suited for offsetting actual emissions rather than potential emissions because the applicant can pay its fair share to mitigate the cumulative effects of ozone (VOC, NO_x) and PM_{10} by complying with the existing in-use on- and off-road diesel engine regulations. In addition, it is likely that the maximum production amounts analyzed for the proposed would first occur many years in the future after the diesel engine requirements are fully implemented, thus potentially reducing emissions relative to the estimated emissions presented in the Air Quality Assessment and associated Addendum of the proposed project, because the emissions estimates in these studies follow conservative methodologies to ensure they represent the maximum reasonably foreseeable future condition with the project.

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) Open Space and Conservation Element includes the following policies related to air quality that apply to the proposed project:

Open Space and Conservation Element

Section G. Air Quality

Goal OS-G: To improve air quality and minimize the adverse effects of air pollution in Fresno County.

Policy OS-G.2: The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.

Policy OS-G.11: The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include, but are not limited to, industrial and manufacturing uses and any other uses which have the potential for creating a hazardous or nuisance effect.

Policy OS-G.14: The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVAPCD's particulate matter of less than ten (10) microns (PM_{10}) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.

Policy OS-G.15: The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

Fresno County Ordinance Code

The Fresno County Ordinance Code has the following regulations related to air quality that apply to the proposed project:

Title 15—Building and Construction

Chapter 15.04—General Provisions

15.04.120—Public Nuisance in Construction and Demolition

Any person to whom a permit has been issued as provided herein for the repair, alteration, demolition or construction of any structure shall comply with each of the following:

A. Take reasonable precaution to prevent or control the movement of wind born dust created by such activities;

B. Promptly remove all dust and mud tracked into a public street by the movement of vehicles, equipment, materials and personnel;

Zoning Ordinance of Fresno County—Land Use and Planning

The Zoning Ordinance of Fresno County – Land Use and Planning, last amended June 2018, has policies and ordinances related to air quality. Specifically, Section 858, "Regulations for Surface Mining and Reclamation in All Districts," contains the following countywide development standards:

Section 858—Regulations for Surface Mining and Reclamation in All Districts

H. Mining and Reclamation Standards

8. All interior roads within the site shall be maintained so as to control the creation of dust.

14. Stockpiles of overburden and minerals shall be managed to minimize water and wind erosion.

20. Good operating practices shall at all times be utilized to minimize noise, vibration, dust and unsightliness…

Surface mining operators are required to forward an annual surface mining report to the Department of Conservation (DOC) and to the County Department of Public Works and Development Services. The County is required to conduct or cause an inspection of the surface mining operation within six months of receipt of the operator's annual report to determine whether the surface mining operation is in compliance with the approved conditional use permit, approved mining and reclamation plan, approved financial assurances, and state regulations pertaining to mining. The County must submit the completed inspection form to the DOC within 30 days along with statements on compliance with SMARA, any inconsistencies with SMARA, and any pending action on the mine and reclamation plan, amendments, or

financial assurances. It should be noted that the time frames specified in the County's ordinance have been superseded by statutory amendments to SMARA, effective January 2018. The County will implement that currently applicable requirements associated with state review of SMARA-related documents.

4.3.3 Significance Thresholds and Analysis Methodology

4.3.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on air quality if it would:

a) conflict with or obstruct implementation of the applicable air quality plan;
b) result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard;
c) expose sensitive receptors to substantial pollutant concentrations; or
d) result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

4.3.3.2 Significance Thresholds

The Appendix G significance criteria are qualitative criteria. The Air District has established quantitative thresholds to facilitate the evaluation of the significance criteria. These thresholds are summarized in the following tables:

- Table 4.3-4, "Air Quality Significance Thresholds—Criteria Pollutants,"
- Table 4.3-5, "Air Quality Significance Thresholds—Toxic Air Contaminants and Odor,"
- Table 4.3-6, "Ambient Air Quality Standards," and
- Table 4.3-7, "Significant Impact Level Threshold Values."

Table 4.3-4
Air Quality Significance Thresholds—Criteria Pollutants

Criteria Pollutants			
Pollutant	***Construction Phase (ton/year)***	***Operation Phase Permit-Required (Stationary) Sources (ton/year)***	***Operation Phase Permit-Exempt (Mobile) Sources (ton/year)***
CO	100	100	100
NO_x	10	10	10
ROG	10	10	10

Criteria Pollutants			
Pollutant	***Construction Phase (ton/year)***	***Operation Phase Permit-Required (Stationary) Sources (ton/year)***	***Operation Phase Permit-Exempt (Mobile) Sources (ton/year)***
SO_x	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Table Sources: Air District 2015a.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators).
CO = carbon monoxide; NO_x = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-5
Air Quality Significance Thresholds—Toxic Air Contaminants and Odor

Recommended Toxic Air Contaminants and Odor Thresholds	
Toxic Air Contaminants (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 20 in 1 million Chronic & Acute Hazard Index ≥ 1.0 (project increment)
Odor	More than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period. (Screening distance is one mile for asphalt batch plants)

Table Sources: Air District ND1 and ND2.

Table 4.3-6
Ambient Air Quality Standards

Ambient Air Quality Standards	
Screening Criteria	100 lb/day of any criteria pollutant after implementation of mitigation measures.
Modeling Criteria	If modeling is required because emissions exceed the screening criteria (100 lb/day), then the project would have a significant impact on an ambient air quality if the project concentration plus background concentration measured at the closest air monitoring station exceeds the most stringent state or federal ambient air quality standards (see Table 4.3-1, above) or Significant Impact Level (see Table 4.3-7, below) in cases where background concentration already exceeds or nearly exceeds the ambient air quality standards.

Table Sources: Air District 2015b.
Table Notes: lb/day = pounds per day

Table 4.3-7
Significant Impact Level Threshold Values

Pollutants[a]	Averaging Period	Class I (µg/m³)	Class II (µg/m³)	Class III (µg/m³)
$PM_{2.5}$	Annual	0.05	0.2	0.2
	24-hour	0.27	1.2	1.2
Fugitive $PM_{2.5}$	Annual	--	0.63	--
	24-hour	--	2.5	--
PM_{10}	Annual	0.32	1	--
	24-hour	0.2	5	--
Fugitive PM_{10}	Annual	--	2.08	--
	24-hour	--	10.4	--
Carbon Monoxide (CO)	Annual	--	500	--
	24-hour	--	2000	--
Nitrogen Dioxide (NO_2)	Annual	0.1	1	--
	24-hour	--	7.5	--
Sulfur Dioxide (SO_x)	Annual	0.08	1	--
	24-hour	0.2	5	--
	3-hour	1	25	--
	1-hour	--	7.8	--

Table Sources: Air District 2019b.
Table Notes:
a = Classes refer to the type of receptor being protected and correspond to the primary and secondary ambient air quality standards presented in Table 4.3-1. Up to date as of 12/4/2019.
µg/m³ = micrograms per cubic meter.
-- = no significant impact level exists.
CO = carbon monoxide; NO_2 = nitrogen dioxide; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

4.3.3.3 Analysis Methodology

The following sections summarizes the methods for evaluating emissions of criteria air pollutants and potential ambient air quality and health impacts associated with project emissions. Detailed methodology is provided in the Air Quality Assessment (Appendix D-1) and the associated Addendum (Appendix D-2). The general analysis approach was to estimate the increase in emissions from proposed mining, processing, and reclamation operations relative to emissions from existing mining and processing operation at the project sites (which are the existing on the ground physical conditions referred to as the CEQA baseline) and compare the estimated increase to the significance thresholds adopted by Air District.

Project Design Features and Assumptions

Table 4.3-8, "Rockfield Modification Project Components of Air Quality and Greenhouse Gas Modelling," summarizes the project features incorporated into the Air Quality Assessment analysis.

Table 4.3-8
Rockfield Modification Project Components of Air Quality and Greenhouse Gas Modelling

Activity	Description
CONSTRUCTION[1]	
Aggregates PlantConstruction	Construction of aggregates processing plant at the Quarry Site. Expectedschedule of 5 days.
Grading	Expected schedule of 5 days.
Paving	Paving of approximately one mile of road. Expectedschedule of 10 days.
Site Preparation	Clearing of Quarry Site and site preparation. Expected schedule of 10 days.
RESOURCE RECOVERY AND PROCESSING	
Mining Method	Addition of hard rock mining to Quarry Site activities. Addition of primary crusher in pit. Increased use of excavator and dozer operations, in addition to excavation by hydraulic shovel or front-end loader. Addition of blasting will berequired.
Processing	Extracted resources at the Quarry Site will be processed onsite rather than beingtransported to the Plant Site for processing.
Estimated Annual Aggregates Production	Increase from 1,374,272 tons per year to 3,000,000 tons per year
Estimated Annual ReadyMix Production	Increase from 189,550 cubic yards per year to 300,000 cubic yards per year
Estimated Annual RecyclePlant Production	Increase from 25,000 tons per year to 200,000 tons per year
Estimated Annual AsphaltPlant Production	Increase from 0 tons per year to 500,000 tons per year
Hours of Operation	6 days per week, Monday through Saturday (For health risk assessment, modeled conservatively as 7 days per week, 12 hours per day. For criteria pollutant emissions, modeled based on maximum hour and day, by activity levels.)

Table Source: Sespe 2019.
Table Notes:

1. The construction of the aggregate plant on the Quarry Site was conservatively assumed to occur in conjunction with the operation of the plant (i.e., the analysis assumed some plant equipment would be operating even during times when it may actually be under construction). This approach is conservative because it results in higher emissions in the model than if construction of plant equipment were estimated separately.

Impacts assessment incorporated the following general assumptions:

- The excavation and associated equipment would operate in compliance with applicable air quality regulations.
  - Diesel engines would continue to comply with applicable state regulations (e.g., ATCM) including establishment of an idling policy, and limiting idle time to less than five minutes (13 CCR Section 2449).
  - Fugitive dust emissions would continue to be controlled through implementation of controls and compliance measures within Air District Rules 8011, 8021, 8031, 8041, 8051, 8061, and 8071.
- Hazardous substances or acutely hazardous substances would not be stored on either of the project sites in quantities that would trigger chemical accident prevention provisions of the CAA or the implementing regulation (40 CFR Part 68).
- The construction of the aggregate plant on the Quarry Site was conservatively assumed to occur in conjunction with the operation of the plant (i.e., the analysis assumed the plant equipment would be operating even during times when it may actually be under construction). This approach is conservative because it results in higher emissions in the model than if construction of plant equipment were estimated separately.

Design features of the project include:

- Emissions characteristics of off-road vehicle engines in any particular year match those in the California Emissions Estimator Model (CalEEMod).

Emissions Calculations Methodologies

Emissions from combustion sources associated with the proposed project primarily consist of non-road diesel engines inoff-road vehicles. Exceptions may include water and service trucks, which are on-road but assumed to have off-road engines for purposes of this analysis. This is a conservative assumption because on-road engines generally emit less pollutants as compared to off-road engines manufactured in the same calendar year (i.e., an on road 2010 model year engine is cleaner than a 2010 off-road engine). Emissions from dust sources associated with the proposed project include windblown dust and other storage pile area emissions (e.g., loading and handling), dozer/quarrying emissions, drop emissions from material transfer, and processing plants.

Emissions from off-road engines were calculated using the CalEEMod default method and emissions factors. Blasting emissions calculations used AP-42 methodology and

speciation profiles for air toxics from San Diego County Air Pollution Control District (San Diego County APCD) (EPA 1995; San Diego County APCD 2021). AP-42 and San Diego County APCD emissions factors/profiles were used because the Air District lacks guidance for blasting emissions, and links to both AP-42 and San Diego County APCD resources are provided on the Air District emissions factor webpage (Air District 2021). Dust emissions from aggregate handling and dropping, and dust emissions from travel on unpaved roads within the project sites, were predicted using AP-42 standard emissions factors (EPA 1995).

Baseline Emissions

Baseline emissions were calculated by analyzing fuel use data, engine information, and production records provided by the Applicant. Historical data for production, fuel use, and pollutant emissions were chosen to represent maximum activity levels onsite and utilized to determine the baseline emissions. Historical production data is summarized in Table 4.3-9, "Historical Production Data."

Table 4.3-9
Historical Production Data

Material Produced	Max Hour	Max Day	Annual
Aggregate (tons)	475	3,166.63	1,374,272
Recycled Material (tons)	225	1,500	25,000
Asphalt (tons)	0	0	0
Ready Mix (cubic yards)	190	1267	189,550

Table Source: Sespe 2019.

Baseline emissions calculations results are demonstrated below in Table 4.3-10, "Baseline Maximum Hourly Emissions," Table 4.3-11, "Baseline Maximum Daily Emissions," and Table 4.3-12, "Baseline Maximum Annual Emissions." Permit-required (stationary) equipment and permit-exempt (mobile) equipment emissions are separated as they have separate significance thresholds.

Table 4.3-10
Baseline Maximum Hourly Emissions

Source	ROG (lb/hr)	CO (lb/hr)	NO_X (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_X (lb/hr)
STATIONARY (PERMIT-REQUIRED)						
Aggregates Plant	-	-	-	1.3	0.4	-
Ready Mix Plant	-	-	-	0.3	0.1	-
Asphalt Plant	-	-	-	-	-	-
Recycle Plant	-	-	-	0.4	0.05	-
Stockpiles	-	-	-	1.3	0.4	-

Source	ROG (lb/hr)	CO (lb/hr)	NO_X (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_X (lb/hr)
Total Stationary	**-**	**-**	**-**	**3.3**	**0.9**	**-**
MOBILE (PERMIT-EXEMPT)						
Off-road Engines	1.7	9.5	22.7	0.9	0.8	0.0
On-road Vehicles (onsite)	0.3	0.8	3.5	84.3	24.7	0.0
On-road Vehicles (offsite)	9.8	32.9	140.3	17.9	7.4	0.6
Quarrying	-	-	-	10.3	3.0	-
Blasting	-	-	-	-	-	-
Material Handling	-	-	-	1.6	0.5	-
Total Mobile	**11.8**	**43.2**	**166.5**	**115.0**	**36.4**	**0.6**

Table Source: Sespe 2019.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators).
- = source does not have emissions.
lb/hour = pounds per hour.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-11
Baseline Maximum Daily Emissions

Source	ROG (lb/day)	CO (lb/day)	NO_X (lb/day)	PM_{10} (total) (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
STATIONARY (PERMIT-REQUIRED)						
Aggregates Plant	-	-	-	8.9	2.6	-
Ready Mix Plant	-	-	-	2.3	0.7	-
Asphalt Plant	-	-	-	-	-	-
Recycle Plant	-	-	-	2.4	0.3	-
Stockpiles	-	-	-	8.8	2.6	-
Total Stationary	**-**	**-**	**-**	**22.3**	**6.1**	**-**
MOBILE (PERMIT-EXEMPT)						
Off-road Engines	11.6	63.4	151.4	5.8	5.4	0.2
On-road Vehicles (onsite)	1.7	5.5	23.4	562.2	164.8	0.1
On-road Vehicles (offsite)	65.3	219.3	935.0	119.5	49.0	3.9
Quarrying	-	-	-	68.5	20.0	-
Blasting	-	-	-	-	-	-
Material Handling	-	-	-	10.9	3.2	-
Total Mobile	**78.6**	**288.1**	**1109.8**	**766.9**	**242.4**	**4.2**

Table Source: Sespe 2019.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators).
- = source does not have emissions.
lb/day = pounds per day.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-12
Baseline Maximum Annual Emissions

Source	ROG (ton/year)	CO (ton/year)	NO_X (ton/year)	PM_{10} (total) (ton/year)	$PM_{2.5}$ (ton/year)	SO_X (ton/year)
STATIONARY (PERMIT-REQUIRED)						
Aggregates Plant	-	-	-	2.0	0.6	-
Ready Mix Plant	-	-	-	0.2	0.1	-
Asphalt Plant	-	-	-	-	-	-
Recycle Plant	-	-	-	0.0	0.0	-
Stockpiles	-	-	-	5.8	1.7	-
Total Stationary	**-**	**-**	**-**	**7.9**	**2.3**	**-**
MOBILE (PERMIT-EXEMPT)						
Off-road Engines	4.3	24.3	56.2	2.4	2.2	0.05
On-road Vehicles (onsite)	0.2	0.7	3.0	88.7	26.0	0.01
On-road Vehicles (offsite)	4.2	14.1	60.2	7.7	3.8	0.3
Quarrying	-	-	-	15.2	4.4	-
Blasting	-	-	-	-	-	-
Material Handling	-	-	-	1.4	0.4	-
Employee Trips	0.8	6.2	0.7	0.0	0.0	0.0
Total Mobile	**9.5**	**45.3**	**120.1**	**115.5**	**36.8**	**0.3**

Table Source: Sespe 2019.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators).
- = source does not have emissions.
ton/year = tons per year.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Proposed Project Emissions

Construction Phase

Construction phase emissions are shown in Table 4.3-13, "Construction Phase Emissions." Construction consists of building the aggregate processing plant at the Quarry Site, and grading, paving, and site preparation (Table 4.3-8).

Table 4.3-13
Construction Phase Emissions

Units	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_x
Pounds per Day	4.8	34.1	54.5	337.3	41.0	0.064
Tons per Year	0.0478	0.32	0.49	0.95	0.17	0.00054

Table Source: Sespe 2019.

Operation Phase

Operation phase emissions are based on the maximum proposed aggregate production and processing volumes anticipated during the entire 100-year project duration, and are summarized in Table 4.3-14, "Operation Phase Maximum Activity."

Table 4.3-14
Operation Phase Maximum Activity

Material Produced	Max Hour[1]	Max Day[2]	Annual[2]
Aggregate (tons)	475 and 1,100	10,500	3,000,000
Asphalt (tons)	500 or 500	6,000	500,000
Ready Mix (cubic yards)	190 or 382	2,284	300,000
Recycled Material (tons)	225 or 225	2,700	200,000

Table Source: Sespe 2019.
Table Notes:
1. Cells with two values are Plant Site and Quarry Site amounts, respectively. When the two values are separated by "and," both sites were assumed to operate simultaneously and when separated by "or" were assumed to operate exclusively at one site or the other: not both simultaneously.
2. Cells with one value represent the total amount for the Plant and Quarry Sites combined.

Estimated emissions based on proposed project activities at the Plant Site and Quarry Site are summarized in the following tables:

- Table 4.3-15, "Operation Phase Maximum Hourly Emissions,"
- Table 4.3-16, "Operation Phase Maximum Daily Emissions," and
- Table 4.3-17, "Operation Phase Maximum Annual Emissions."

The maximum operation phase emissions are based on the emissions that would occur during maximum proposed aggregate production and processing volumes that could occur during the 100-year project duration, as identified in Table 4.13-14. This means that the estimates in Tables 4.13-15, 4.13-16, and 4.13-17 represent the maximum emissions for that source/pollutant combination that may occur during either Stage 1 or Stage 2 operations.

Table 4.3-15
Operation Phase Maximum Hourly Emissions

Source	ROG (lb/hr)	CO (lb/hr)	NO_x (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_x (lb/hr)
STATIONARY (PERMIT-REQUIRED)						
Aggregates Plant	-	-	-	5.9	1.7	-
Ready Mix Plant	-	-	-	0.3	0.1	-
Asphalt Plant	16.0	65.0	4.4	12.0	0.1	1.7
Recycle Plant	-	-	-	0.4	0.0	-

Source	ROG (lb/hr)	CO (lb/hr)	NO_x (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_x (lb/hr)
Stockpiles	-	-	-	2.8	0.8	-
Total Stationary	**16.0**	**65.0**	**4.4**	**21.3**	**2.8**	**1.7**
MOBILE (PERMIT-EXEMPT)						
Off-road Engines	1.4	8.4	16.0	0.1	0.1	0.03
On-road Vehicles (onsite)	0.0	0.1	0.8	54.7	16.0	0.002
On-road Vehicles (offsite)	0.7	5.2	31.5	17.3	5.3	0.1
Quarrying	-	-	-	23.1	6.7	-
Blasting	-	36.9	9.4	-	-	1.1
Material Handling	-	-	-	2.7	5.3	-
Total Mobile	**2.1**	**50.6**	**57.6**	**97.8**	**33.4**	**1.2**

Table Source: Sespe 2019.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators).
- = source does not have emissions.
lb/hour = pounds per hour.
CO = carbon monoxide; NO_x = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-16
Operation Phase Maximum Daily Emissions

Source	ROG (lb/day)	CO (lb/day)	NO_x (lb/day)	PM_{10} (total) (lb/day)	$PM_{2.5}$ (lb/day)	SO_x (lb/day)
STATIONARY (PERMIT-REQUIRED)						
Aggregates Plant	-	-	-	39.0	11.4	-
Ready Mix Plant	-	-	-	2.3	0.7	-
Asphalt Plant	106.7	433.3	29.1	79.7	0.9	11.3
Recycle Plant	-	-	-	2.4	0.3	-
Stockpiles	-	-	-	18.7	5.5	-
Total Stationary	**106.7**	**433.3**	**29.1**	**142.2**	**18.7**	**11.3**
MOBILE (PERMIT-EXEMPT)						
Off-road Engines	9.3	55.9	106.3	0.4	0.4	0.2
On-road Vehicles (onsite)	0.1	0.9	5.2	364.6	106.5	0.0
On-road Vehicles (offsite)	4.5	34.9	210.1	115.0	35.5	0.7
Quarrying	-	-	-	154.0	45.0	-
Blasting	-	245.7	62.3	-	-	7.3
Material Handling	-	-	-	18.2	35.5	-
Total Mobile	**13.9**	**337.3**	**384.0**	**652.2**	**222.9**	**8.2**

Table Source: Sespe 2019.

Source	ROG (lb/day)	CO (lb/day)	NO_x (lb/day)	PM_{10} (total) (lb/day)	$PM_{2.5}$ (lb/day)	SO_x (lb/day)

Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators).
- = source does not have emissions.
lb/day = pounds per day.
CO = carbon monoxide; NO_x = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-17
Operation Phase Maximum Annual Emissions

Source	ROG (ton/yr)	CO (ton/yr)	NO_x (ton/yr)	PM_{10} (total) (ton/yr)	$PM_{2.5}$ (ton/yr)	SO_x (ton/yr)
STATIONARY (PERMIT-REQUIRED)						
Aggregates Plant	-	-	-	5.6	1.6	-
Ready Mix Plant	-	-	-	0.3	-	-
Asphalt Plant	8.0	32.5	2.2	6.0	0.1	0.9
Recycle Plant	-	-	-	0.2	0.0	-
Stockpiles	-	-	-	12.3	11.4	-
Total Stationary	**8.0**	**32.5**	**2.2**	**24.3**	**13.2**	**0.9**
MOBILE (PERMIT-EXEMPT)						
Off-road Engines	5.2	25.1	60.2	0.2	0.2	0.1
On-road Vehicles (onsite)	0.0	0.1	0.7	59.5	17.4	0.0
On-road Vehicles (offsite)	0.6	4.0	28.5	15.7	4.8	0.1
Quarrying	-	-	-	31.5	9.5	-
Blasting	-	50.3	11.6	-	-	1.5
Material Handling	-	-	-	3.7	1.1	-
Employee Trips	0.1	0.5	0.1	0.0	0.0	0.0
Total Mobile	**5.9**	**79.9**	**101.0**	**110.7**	**33.0**	**1.7**

Table Source: Sespe 2019.
Table Notes: As indicated in the *Guidance for Assessing and Mitigating Air Quality Impacts* (Air District 2015b), "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators).
- = source does not have emissions.
ton/yr = tons per year.
CO = carbon monoxide; NO_x = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Health Risk

Exposure to equipment exhaust and fugitive dust can lead to various health impacts. Specifically, the following three types of public health impacts are commonly associated with exposure to trace metals in dust and diesel particulate matter:

1) Cancer risk (reported as a probability)
2) Acute non-cancer risk (reported as a Hazard Index)
3) Chronic non-cancer risk (reported as a Hazard Index)

The preparation of health risk assessments is a multi-step process. The first step is to identify potential contaminants that may contribute to public health risks (hazard identification. The second step is to assess the amount of contaminants that may reach the public (exposure assessment). The third step is to calculate the magnitude of the health risk as a result of exposure to harmful contaminants on the basis of the toxicology of the contaminants (dose-response assessment and risk characterization). The health risk assessment for the proposed project was performed using current best practices including methods from the OEHHA (2015) risk assessment guidelines.

Hazard Identification and Quantification

For air toxics sources, hazard identification involves the pollutant(s) of concern emitted by a facility, and the types of adverse health effects associated with exposure to the chemical(s), including whether a pollutant is a potential human carcinogen or is associated with other types of adverse health effects. Diesel particulate matter is the primary toxic air contaminant emitted by off-road engines used in mining projects.

As described in Section 4.3.1.3, "Toxic Air Contaminants," diesel particulate matter, respirable crystalline silica, and naturally occurring asbestos are toxic air contaminants of concern associated with proposed project sources. The health risk assessment considered whether health risk from asbestos should be quantified. It was determined based on review of available geologic maps and language in the Asbestos ATCM's (17CCR Sections 93105 and 93106) that asbestos is unlikely to be a concern. The geotechnical assessment for the proposed project (Appendix F-1) confirms that the project sites are not located in a region of California noted for rock types that contain naturally occurring asbestos and a review of on-site core samples for several borings did not indicate the presence of ultramafic rock constituents. Therefore, the proposed project would not result in health risk impacts from exposure to naturally occurring asbestos.

Diesel particulate matter has an assigned cancer potency factor (CPF) and a non-cancer reference exposure level that are used to evaluate the health risk. Fugitive dust

is generally inert but does contain trace metals and respirable crystalline silica. As documented in Appendix D-1, soil sampling of the project sites was conducted to determine potential concentrations of metals and respirable crystalline silica in the site soils. The health risk analysis conservatively assumed that toxic air contaminants are present in soil onsite at the highest concentration reported by the laboratory throughout the samples taken. Toxic air contaminants that were not detected during sampling are assumed to be present at the Minimum Detection Level.

Air District standard speciation profiles and data determined via sampling were combined with calculated PM_{10} emissions to determine the mass of each toxic air contaminant, and dispersion coefficients to quantitatively predict the ground level concentration of each toxic air contaminant, to which individuals may be exposed (see exposure assessment subsection below). The concentrations were then combined with exposure parameters to quantify the dose received by each receptor and for each exposure pathway. In the case of non-cancer risk, the exposures were then summed on a target organ by target organ basis using Hotspots Analysis and Reporting Program Air Dispersion Modeling and Risk Assessment Tool Version 2 (HARP2 risk model) to determine the maximum Hazard Index among the target organs in the body. The maximum target organ Hazard Index was then compared to the non-cancer significance criteria (i.e., 1.0 Hazard Index) as discussed in the following subsections.

Exposure Assessment

The purpose of exposure assessment is to estimate the extent of public exposure to emitted substances. In practice this means estimating exposures for those emitted substances for which potential cancer risk or non-cancer health hazards for acute, repeated 8-hour, and chronic exposures will be evaluated. This involves emission quantification, modeling of environmental transport, evaluation of environmental fate, identification of exposure routes, identification of exposed populations, and estimation of short-term (e.g., 1-hour maximum), 8-hour average, and long-term (annual) exposure levels.

HARP2 risk model software was used to model ground level concentrations at specific off-site locations. HARP2 incorporates the EPA-approved air dispersion model, American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD). Air dispersion modeling for the proposed project was performed using AERMOD View by Lakes Environmental (Version 9.7.0 running AERMOD executable Version 18081).

Modeled receptors are shown on the following figures:

- Figure 4.3-1, "Non-Residential Sensitive Receptor Locations,"
- Figure 4.3-2, "Detailed Model Receptor Locations," and
- Figure 4.3-3, "Plant Site Labeled Receptor Locations."

225 cartesian grid receptors, 26 discrete receptors, and 156 fence-line/plant boundary receptors were modeled. Receptors were modeled at ground level.

Sources of emissions were assigned positive emissions values and baseline sources were assigned negative values (i.e., to represent sink) so that the health risk assessment results represent the change in health risk from the proposed project relative to baseline conditions. In order to obtain the most conservative possible health risk assessment, the model assumes mining would place as close as possible to residential receptors. Concentration of mining emissions into a small area near receptors allows the model to demonstrate potential risk in the worst-case scenario.

The model was segmented into two intervals that were chosen to coincide with onsite activity changes and represent Stage 1 (years 1 through 30, with activities at both the Plant Site and Quarry Site) and Stage 2 (years 30 through 100, with activities at only the Quarry Site). Although the second interval represents the final 70 years of the 100-year project, consistent with Air District guidance, it was modeled for 30 years which represents 95th percentile of residency durations at a single location.

Dose-Response Assessment

Dose-response assessment is the process of characterizing the relationship between exposure to an agent and incidence of an adverse health effect in exposed populations. In quantitative carcinogenic risk assessment, the dose-response relationship is expressed in terms of a potency slope that is used to calculate the probability or risk of cancer associated with intensity of the exposure. For noncarcinogenic effects, dose-response data developed from animal or human studies are used to develop acute, repeated 8-hour, and continuous exposure reference exposure levels. The non-cancer reference exposure levels are defined as the concentration at which no adverse non-cancer health effects are anticipated even in sensitive members of the general population, with infrequent one-hour exposures, repeated 8-hour exposures over a significant fraction of a lifetime, or continuous exposure over a significant fraction of a lifetime, respectively.

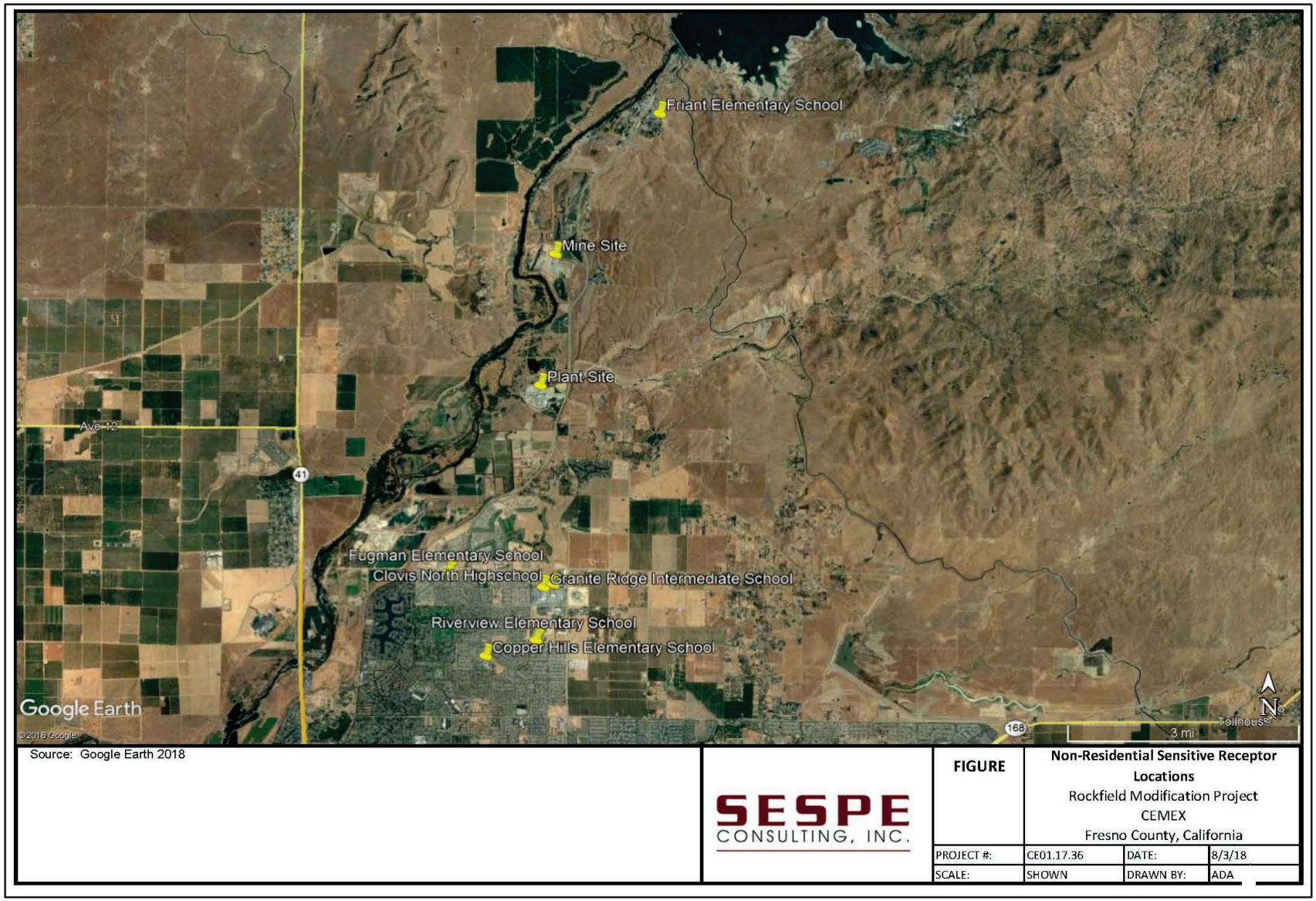
Risk Characterization

Risk characterization is the final step of the health risk assessment. In this step, information developed through the exposure assessment is combined with information from the dose-response assessment to characterize risks at each receptor. A general summary of the risk characterization components includes the following:

- The locations of the point of maximum impact (PMI), the maximum exposed individual sensitive receptor (MEIR), and the maximum exposed individual off-site worker (MEIW) are identified. The PMI, MEIW, and MEIR for cancer risk and for noncancer hazard indices may not occur at the same location; and should be identified.
- The location of any specified sensitive receptors (e.g., schools, hospitals, daycare, or eldercare facilities) are identified.
- Estimates of population-wide cancer burden are assessed if maximum incremental cancer risk greater than zero for residential receptors. The cancer burden is calculated by multiplying the cancer risk at a census block centroid by the number of people who live in the census block, and adding up the estimated number of potential cancer cases across the zone of impact. The result of this calculation is a single number that is intended to estimate the number of potential cancer cases within the population that was exposed to the emissions.

Odor

There are sensitive receptors located within one mile of the Plant Site and Quarry Site, and therefore odor concerns associated with the asphalt plant cannot be screened out based on distance (Table 4.3-5). For consideration of odors, the odor complaint history was reviewed to determine whether or not the past operation of this asphalt plant on the Plant Site (even though it stopped operating in 2009 and therefore is not a contributor to the existing environmental setting for the project) resulted in odor complaints. This review disclosed no odor complaints for the past operation of the asphalt plant. Advances in odor control technology, wind direction, and the location of the asphalt plant relative to the nearest sensitive receptors were also considered.



SOURCE: Sespe Consulting, Inc. 2019

Non-Residential Sensitive Receptor Locations
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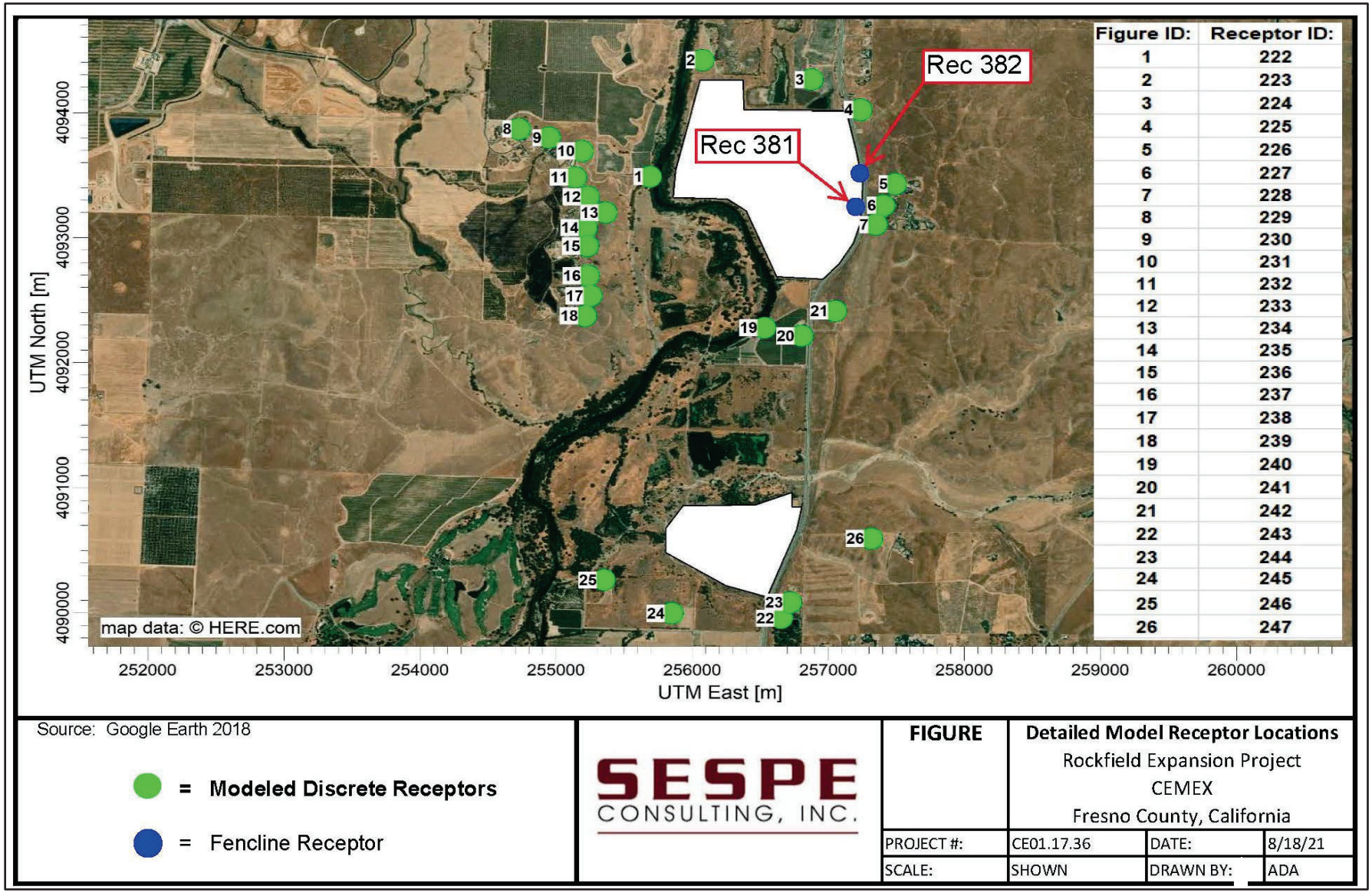

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SOURCE: Sespe Consulting, Inc. 2022

Detailed Model Receptor Locations
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Figure 4.3-2

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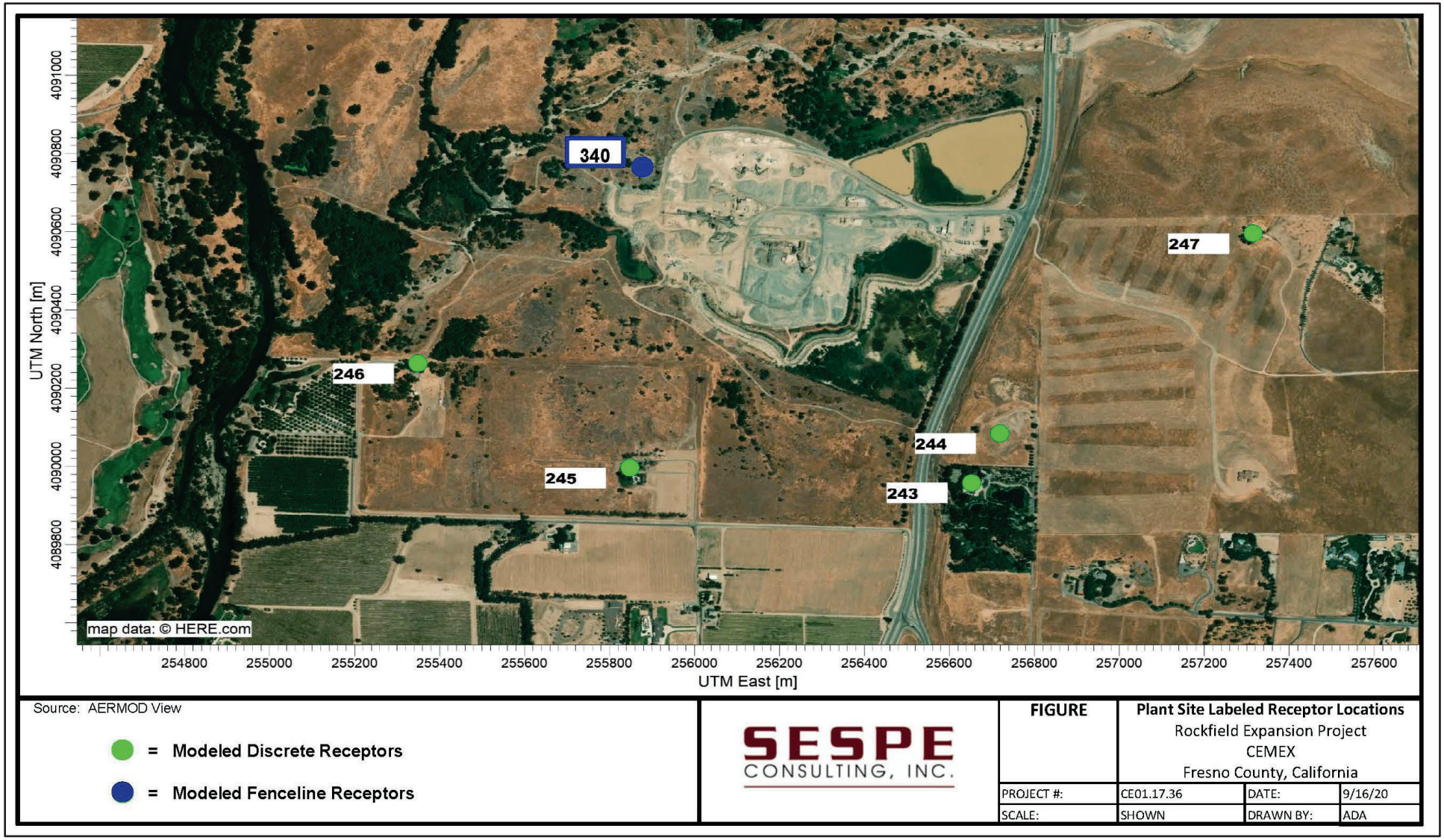

SOURCE: Sespe Consulting, Inc. 2022

Plant Site Labeled Receptor Locations
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Figure 4.3-3

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4.3.4 Project Impacts and Mitigation Measures

Impact 4.3-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan

The Air District's air quality attainment plans are discussed in the "San Joaquin Valley Air Pollution Control District" subsection. Potential control measures that may be pursued to reduce emissions are described in the attainment plans. These measures would be implemented as rules and therefore would undergo the associated public rulemaking process, which allows for quarry operators to provide input on the feasibility of compliance with proposed rules. Thus, it is unlikely that such a process would result in a requirement with which the proposed project could not comply. Furthermore, aggregates production is proportional to population growth, which is a factor that is accounted for in attainment plans. Lastly, as described below in Impact 4.3-2, the proposed project would not result in any significant and unavoidable air quality impacts related to criteria air pollutant emissions. For these reasons, the proposed project would not obstruct implementation of an air quality attainment plan and this impact would be less than significant.

Level of Significance Before Mitigation: Less than significant.

Mitigation Measures: None required.

Impact 4.3-2: Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Project Region is Non-Attainment Under an Applicable Federal or State Ambient Air Quality Standard

Project operations associated with mining, processing, and reclamation activities would emit the criteria air pollutants ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ from construction equipment and from mobile equipment and motor vehicles associated with excavation and blasting, and operation of an aggregate plant, ready-mix concrete plant, asphalt plant, and portable recycle plant on the Plant Site and Quarry Site.

The CEQA Guidelines define cumulative impacts as two or more individual effects which, when considered together, are either significant or "cumulatively considerable", meaning they add considerably to a significant environmental impact. An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed. A Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program, including but not limited to an air quality attainment or maintenance plan that

provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (14 CCR Section 15064(h)(3)).

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of state and federal ambient air quality standards is a function of successful implementation of the Air District's attainment plans. Consequently, the Air District's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. Thus, if the increase in emissions relative to baseline conditions exceeds thresholds for ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$, then the proposed project would result in a cumulatively considerable net increase of a criteria pollutant for which the Air District is in non-attainment under applicable state or federal ambient air quality standards. Air District attainment significance criteria for criteria pollutants are presented in Table 4.3-4 alongside non-attainment pollutants for disclosure purposes.

Based on the analysis described in Section 4.3.4.3, "Analysis Methodology," the proposed project's construction and operation phase emissions are summarized and compared to significance criteria in Table 4.3-18, "Construction Phase Criteria Pollutant Annual Emissions," and Table 4.3-19, "Operation Phase Criteria Pollutant Annual Emissions."

Table 4.3-18
Construction Phase Criteria Pollutant Annual Emissions

	ROG (ton/year)	CO (ton/ year)	NO_X (ton/ year)	PM_{10} (ton/ year)	$PM_{2.5}$ (ton/year)	SO_x (ton/ year)
Construction	0.0478	0.32	0.49	0.95	0.17	0.00054
Threshold	10	100	10	15	15	27
Significant?	No	No	No	No	No	No

Table Source: Sespe 2019.
Table Notes:
ton/year = tons per year.
CO = carbon monoxide; NO_x = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-19
Operation Phase Criteria Pollutant Annual Emissions

Criteria Pollutant	Permit-Required (Stationary) Sources (ton/yr)			Permit-Exempt (Mobile) Sources (ton/yr)		
	Project Emissions	*Significance Criteria*	*Project Exceeds?*	*Project Emissions*	*Significance Criteria*	*Project Exceeds?*
ROG	6.1	10	No	-3.9	10	No
CO	33.8	100	No	33.8	100	No
NO_x	2.4	10	No	-23.3	10	No
PM_{10}	16.2	15	Yes	-5.3	15	No
$PM_{2.5}$	12.2	15	No	-4.0	15	No
SO_X	0.9	27	No	1.4	27	No

Table Source: Sespe 2021.
Table Notes:
Bold values indicate that the criteria pollutant emissions exceed the significance criteria.
Negative values represent emissions reductions relative to baseline emissions due to newer technology and lower emission equipment requirements, particularly those described in the "In-Use Off-Road Diesel-Fueled Fleets" and "In-Use On-Road Diesel-Fueled Vehicles".
As indicated in the Guidance for Assessing and Mitigating Air Quality Impacts, "permit-required" sources are stationary sources (e.g., processing plant, hot-mix asphalt plant, ready-mix concrete plant, recycling plant), and "permit-exempt" sources are mobile sources (e.g., haul trucks, excavators).
ton/year = tons per year.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

The impact analysis for a project's potential to exceed or contribute to exceedance of an ambient air quality standard normally involves modeling emissions to predict the concentration of pollutant(s) off-site. The Air District has established a screening level of 100 pounds per day (lbs/day) that may be used to avoid modeling impacts that are unlikely to result in exceedances. If a project exceeds this screening level, then additional modeling is required to determine whether project emissions would exceed applicable ambient air quality standard and, therefore, result in a potentially significant impact requiring mitigation.

Baseline emissions from sources located at the project sites were subtracted from future emissions at the project sites to estimate the increase in emissions on-site for comparison to the 100 lbs/day screening level as shown in Table 4.3-20, "Net Increase in Daily Emissions and Model Screening Level Comparison."

Table 4.3-20
Net Increase in Daily Emissions and Model Screening Level Comparison

Scenario	CO (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
On-Site Baseline	78.4	199.3	767.9	228.3	0.3
On-Site Project	1,194.5	203.3	1,183.6	371.4	30.3
On-Site Increase from Project	1,116.1	4.0	415.7	143.1	30.0
Screening Criteria	100	100	100	100	100
Exceeds Criteria?	**Yes**	No	**Yes**	**Yes**	No

Table Source: Sespe 2021.
Table Notes:
lb/day = pounds per day. CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

As shown in Table 4.3-18, the construction phase of the proposed project would not generate emissions that could exceed the screening level for any criteria pollutants. As shown in Table 4.3-19 and 4.3-20, proposed project mining, processing, and production operations could generate emissions that exceed the annual screening level for PM_{10}, and the daily screening level for CO, PM_{10}, and $PM_{2.5}$. Therefore, the proposed project could potentially result in a cumulatively considerable net increase of these criteria pollutants. Note that for permit-exempt (mobile) sources, the emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ would decrease due to technological advancement that facilitates the continued reduction in emissions from mobile diesel-powered equipment.

The potential health risks of CO, PM_{10}, and $PM_{2.5}$ are described above in Section 4.3.2.2, "Pollutants and Health Effects." Ambient air quality standards are established to protect the public from adverse health effects of criteria pollutants and to provide protection against visibility impairment and damage to animals, crops, vegetation, or buildings. Because the proposed project could result in emissions that exceed the Air District's thresholds of significance for criteria pollutants, the adverse health effects, visibility impairment, and damage described above in Section 4.3.2.2 could be caused or exacerbated as a result of the proposed project emissions. Mitigation Measure 4.3-2 would require that all equipment with off-road engines to be retrofitted or upgraded to meet the Tier 4 Interim Particulate Emissions standard and would require dust from unpaved roads and stockpiles to be controlled by the application of dust suppressants. The estimated criteria air pollutant emissions with application of Mitigation Measure 4.-2a, -2b, and -2c are presented in Table 4.3-21, "Mitigated Operation Phase Criteria Air Pollutant Annual Emissions," and Table 4.3-22, "Mitigated Net Change in Daily Emissions."

Table 4.3-21
Mitigated Operation Phase Criteria Air Pollutant Annual Emissions

Criteria Pollutant	Permit-Required (Stationary) Sources (ton/yr)			Permit-Exempt (Mobile) Sources (ton/yr)		
	Project Emissions with Mitigation	*Significance Criteria*	*Project Exceeds?*	*Project Emissions with Mitigation*	*Significance Criteria*	*Project Exceeds?*
ROG	6.1	10	No	-3.9	10	No
CO	33.8	100	No	33.8	100	No
NO_X	2.4	10	No	-23.3	10	No
PM_{10}	14.6	15	No	-60.8	15	No
$PM_{2.5}$	9.8	15	No	-20.1	15	No
SO_X	0.9	27	No	1.4	27	No

Table Source: Sespe 2021.
Table Notes: Negative values represent emissions reductions relative to baseline emissions due to newer technology and lower emission equipment requirements, particularly those described in the "In-Use Off-Road Diesel-Fueled Fleets" and "In-Use On-Road Diesel-Fueled Vehicles", and due to implementation of Mitigation Measure 4.3-2.
tons/year = tons per year.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Table 4.3-22
Mitigated Net Change in Daily Emissions

Scenario	CO (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	SO_X (lb/day)
On-Site Baseline	78.4	199.2	764.7	227.4	0.3
On-Site Future	1,194.5	203.3	678.1	223.9	30.3
On-Site Project with Mitigation	**1,116.1**	4.1	-86.6	-3.5	30.0
Screening Criteria	**100**	100	100	100	100
Exceeds Criteria?	**Yes**	No	No	No	No

Table Source: Sespe 2021.
Table Notes: Negative values represent emissions reductions relative to baseline emissions due to newer technology and lower emission equipment requirements, particularly those described in the "In-Use Off-Road Diesel-Fueled Fleets" and "In-Use On-Road Diesel-Fueled Vehicles", and due to implementation of Mitigation Measures 4.3-2.
lb/day = pounds per day.
CO = carbon monoxide; NO_X = oxides of nitrogen; ROG = Reactive Organic Gases; SO_x = oxides of sulfate; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less.

Prior to mitigation, the project's estimated emissions of NOx and SOx are below the screening level threshold. As shown in Tables 4.3-21 and 4.3-22, Mitigation Measure 4.3-2 would decrease annual and daily emissions of PM_{10} and daily emissions of $PM_{2.5}$ below the screening level thresholds. However, annual emissions of CO would remain greater than the screening level. Therefore, the off-site concentrations of CO were modeled for both mitigated and unmitigated levels to determine whether those concentrations exceed the applicable ambient air quality standard. The results are presented in Table 4.3-23,

"Mitigated and Unmitigated CO Concentrations." As shown in Table 4.3-23, both project and cumulative estimated CO parts per million concentrations would not exceed ambient air quality standards. Consequently, with implementation of Mitigation Measure 4.3-2, criteria air pollutant emissions by the proposed project operations would be below the Air District's thresholds of significance, which are intended to be protective of human health and the environment. Therefore, this impact would be less than significant.

Table 4.3-23
Mitigated and Unmitigated CO Concentrations

Pollutant (period)	Background (ppm)	Mitigated and Unmitigated Project Maximum[1] (ppm)	Mitigated and Unmitigated Cumulative[1] (ppm)	Ambient Air Quality Standard (ppm)	Project Exceeds?	Cumulative Exceeds?
CO (1-hr)	2.4	1.06	3.46	20	No	No
CO (8-hr)	1.8	1.06[2]	3.46[2]	9	No	No

Table Source: Sespe 2021.
Table Notes:
ppm = parts per million.
CO = carbon monoxide.
1. The Addendum (Appendix D-2) indicates that CO emissions remain relatively unchanged by mitigation measures and so the mitigated and unmitigated concentrations are the same and shown in this table.
2. More conservative 1-hour results and background were assumed for 8-hour standard, as 1-hour results are still below 8-hour standard.

Level of Significance Before Mitigation: Significant.

Mitigation Measure 4.3-2: *Fugitive Dust Control Plan*

A Fugitive Dust Control Plan shall be prepared for the proposed project and submitted to the San Joaquin Valley Air Pollution Control District (SJVAPCD) for review and approval prior to project implementation. The Fugitive Dust Control Plan shall demonstrate how the following will be implemented and enforced throughout project activities:

- *Off-road engines shall be retrofitted or upgraded in order to meet the Tier 4 Interim Particulate Emissions standard of 0.008 grams of PM_{10}/horsepower-hour.*
- *Unpaved roads shall be controlled at all times by application of chemical dust suppressants or other equivalent methods with a minimum of 90% effectiveness.*
- *Stockpiles shall be controlled by daily application of water, by covering, or by use of another SJVAPCD approved chemical dust suppressant or other method.*

Level of Significance After Mitigation: Less than significant.

Impact 4.3-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations

Determination of whether project emissions would expose sensitive receptors to substantial pollutant concentrations is a function of assessing potential health risks. Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. When evaluating whether a development proposal has the potential to result in localized impacts, the nature of the air pollutant emissions, the proximity between the emitting facility and sensitive receptors, the direction of prevailing winds, and local topography must be considered. Figures 4.3-1, 4.3-2, and 4.3-3 show the locations of non-residential sensitive receptors and model receptors (including residential receptors) modeled in the health risk assessment (Appendix D-1).

As described above in Section 4.3.4.3, "Analysis Methodology," the health risk assessment did evaluate the potential health effects of toxic air contaminants including diesel particulate matter and respirable crystalline silica. The estimated health risks from operation of the proposed project are presented in Table 4.3-24, "Unmitigated Project Health Risk Impacts." The receptors for which health risks are provided represent the locations of highest exposure.

Table 4.3-24
Unmitigated Project Health Risk Impacts

Model Receptor #—Type[1]	Excess Cancer Cases perMillion People Exposed	Maximum ChronicHazard Index	Maximum Acute Hazard Index
228—Residence (MEIR—Cancer)	281	0.23	0.51
227—Residence (MEIR—Chronic)	207	0.31	0.55
381—Off-Site Worker (MEIW—Cancer)	66	0.66	0.42
382—Off-Site Worker (MEIW—Chronic)	26	0.82	0.49
340—Fence-line Receptor (PMI) (255867 m E, 4090756 m N)	N/A	N/A	1.1
Significance Threshold	**20**	1.0	**1.0**
Threshold Exceeded?	**Yes**	No	**Yes**

Table Source: Table 6 of Sespe 2022
Table Notes: Receptor locations are shown on Figures 4.3-2 and 4.3-3
1. These receptors represent locations of highest exposure.
MEIR = Maximum Exposed Individual Sensitive Receptor; MEIW = Maximum Exposed Individual Off-Site Worker; PMI = Point of Maximum Impact.

As shown in Table 4.3-24, the proposed project may result in exceedance of cancer risk and Maximum Acute Hazard Index significance thresholds, which is a potentially significant impact. The implementation of Mitigation Measure 4.3-2 would require the

implementation of measures to reduce pollutant emissions from off-road diesel equipment and to reduce dust from on-site roads and soil stockpiles. The estimated health risks from operation of the proposed project with mitigation are presented in Table 4.3-25, "Mitigated Project Health Risk Impacts."

Table 4.3-25
Mitigated Project Health Risk Impacts

Model Receptor # — Type[1]	Excess Cancer Cases per Million People Exposed	Maximum Chronic Hazard Index	Maximum Acute Hazard Index
244—Residence (MEIR—Cancer)	< 0	0.02	0.39
227—Residence (MEIR—Chronic)	< 0	0.16	0.43
381—Off-Site Worker (MEIW—Cancer, Chronic)	0.50	0.41	0.59
340—Fence-line Receptor (PMI) (255867 m E, 4090756 m N)	N/A	N/A	0.93
Significance Threshold	**20**	**1.0**	**1.0**
Threshold Exceeded?	No	No	No

Table Source: Sespe 2021.
Table Notes: Receptor locations are shown on Figures 4.3-2 and 4.3-3.
1. These receptors represent locations of highest exposure.
MEIR: Maximum Exposed Individual Receptor; MEIW: Maximum Exposed Individual Worker; PMI: Point of Maximum Impact.

As demonstrated by Table 4.3-25, with the implementation of Mitigation Measure 4.3-2, the proposed project would not result in cancer, chronic, or acute health risks to residences or workers above the respective significance thresholds. The analysis in Appendix B-1 and B-2 indicates that, with mitigation, each residential receptor experienced reduced cancer risk compared to the baseline. As noted in the "Risk Characterization" subsection of Section 4.3.4.3, "Analysis Methodology," estimates of population-wide cancer burden are assessed only if maximum incremental cancer risk greater than zero for residential receptors. Therefore, cancer burden calculations are not necessary for the proposed project, and the potential of the proposed project to expose sensitive receptors to substantial pollutant concentrations would be less than significant with mitigation.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures: *Implement Mitigation Measure 4.3-2.*

Level of Significance After Mitigation: Less than significant.

Impact 4.3-4: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People

The proposed project would involve mining (consisting of excavation and blasting) on the project sites, and the operation of an aggregate plant, ready-mix concrete plant, asphalt plant, and portable recycle plant primarily on the Quarry Site. There are sensitive receptors located within one mile of the project sites, and therefore odor concerns associated with the asphalt plant cannot be screened out based on distance (Table 4.3-5). As shown on Figure 4.3-4, "Wind Rose," the predominant wind direction at the project sites is from the northwest. Therefore, the residences to the east and southeast of the Quarry Site would be most likely to experience odors from the proposed project operations.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact and the variety of odor sources, there are no quantitative or formulaic methodologies to determine the presence of a significant odor impact. As summarized in Table 4.3-5, Air District significance thresholds state that a significant impact would occur if the proposed project received "More than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period."

The asphalt plant on the Quarry Site can be a potential source of odor due to the hydrocarbons that are emitted from asphaltic concrete at elevated temperatures. This primarily occurs when asphalt concrete materials are overheated during the drying process. The fumes are referred to as "blue smoke" and emissions can be limited by minimizing temperatures at which asphalt concrete materials are dried and stored and through asphalt plant design features, such as recycling exhaust back through the combustion chamber. The proposed asphalt plant would include blue smoke controls with an efficiency of 95%, based on manufacturer specifications outlined in "Blue Smoke Control Permitting Parameters" (Blue Smoke Control ND). Blue smoke control collectors are designed for controlling blue smoke that typically comes from in-plant transferring and loading hot mix asphalt. The collectors are high efficiency cartridge mist collectors. Constructed with a steel housing, the filtration is accomplished in cells with each cell having multiple stages; each more efficient than the previous. The first few stages are metal and designed to be cleaned when necessary. Other later stages may be disposable and replaced when they become plugged.

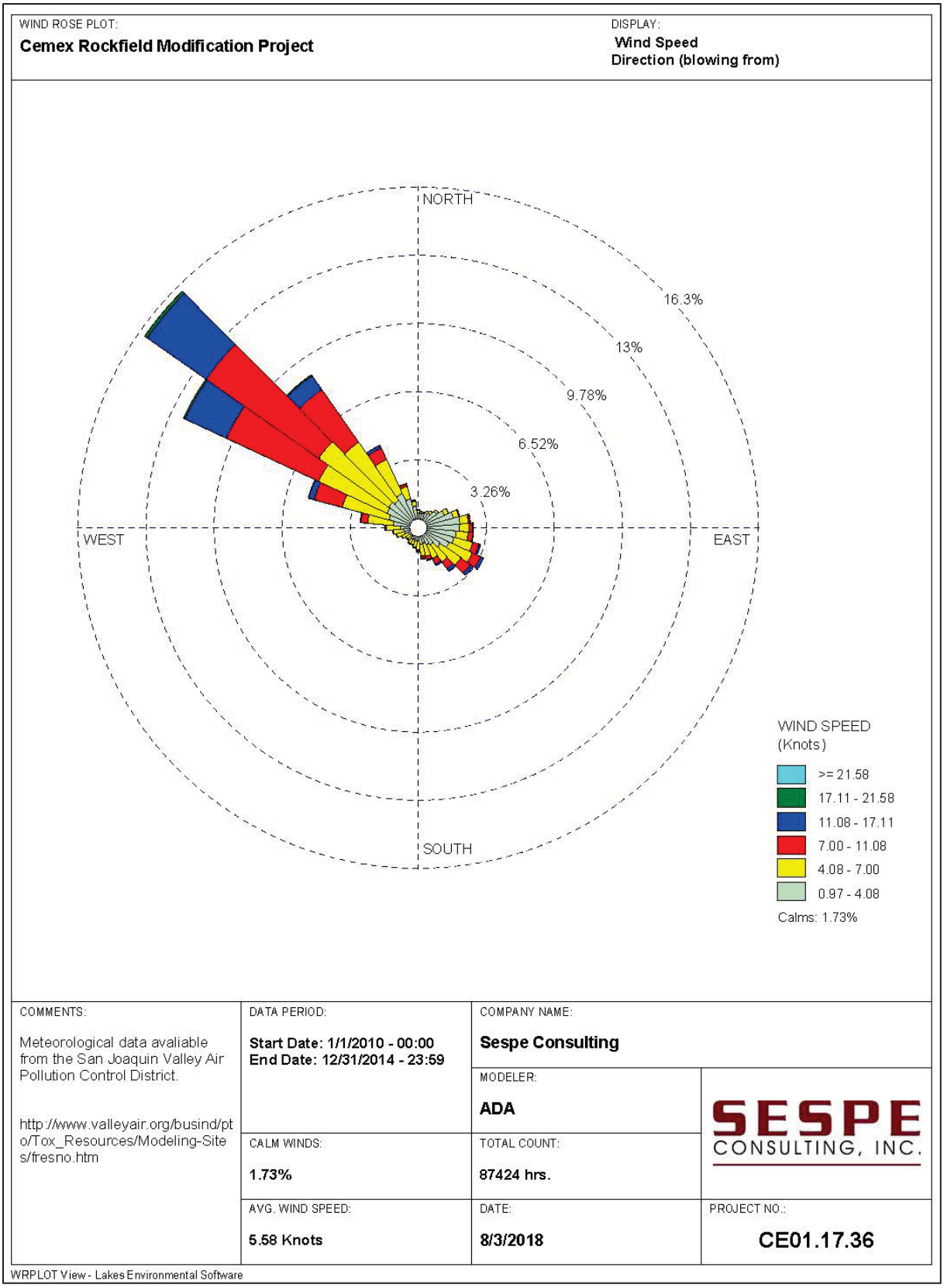
Baseline conditions at the Plant Site include the same potential sources of odor that would be located at the Plant Site during Stage 1 operations, with the exception that there is currently no hot-mix asphalt plant in operation at the Plant Site. However, a hot-mix

asphalt plant did operate at the Plant Site until 2009 and, according to air district records, the operator did not receive any complaints about odors in the past (SJVAPCD 2023). The lack of past complaints indicates that existing mining and processing activities at the project sites have not been a substantial source of odor in the community.

Stage 1 operations propose the continuation of past activities at the Plant Site that did not generate complaints, and, given that the proposed Quarry Site asphalt plant would generate fewer odor producing emissions than the past asphalt plant due to its fuel source being natural gas instead of diesel, and due to the use of new technology to capture 95% of blue smoke emissions, it is not anticipated that Stage 1 operations on the Plant Site could generate odors that would adversely affect a substantial number of people.

During Stage 2 operations at the Quarry Site, blue smoke from the asphalt plant would be a new potential source of substantial odor in the area. However, as discussed above, the asphalt plant would utilize blue smoke control collector technology to control blue smoke. Furthermore, the asphalt plant would be centrally located within the Quarry Site, and the nearest residence to the proposed asphalt plant location would be 0.25 miles to the north, with other residences located at further distances. Because odor dissipates with distance, it is unlikely that substantial odors from the asphalt plant would be generated at these distances. In addition, the areas surrounding the Quarry Site are not densely populated, as shown on Figure 4.3-2, and therefore should any perceptible odor occur outside of the Quarry Site, they would not affect substantial numbers of people. Therefore, it is not anticipated that the operation of the asphalt plant on the Quarry Site could generate odors that would adversely affect a substantial number of people.

Although odor impacts from the operation of the asphalt plant on the Plant Site (i.e., prior 2009 asphalt plant) and Quarry Site are not anticipated, the County conservatively concludes that the impact is potentially significant based solely on the Air District's (2015b) *Guidance for Assessing and Mitigating Air Quality Impacts* presumption that significant odor impacts could occur at sensitive receptors within 1 mile of such plants. Therefore, Mitigation Measure 4.3-4 is recommended to further reduce any potential for odor impacts from the proposed operation of the asphalt plant.



SOURCE: Sespe Consulting, Inc. 2019

Wind Rose
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Figure 4.3-4

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The other proposed uses on the Quarry Site, including excavation and blasting, and operation of a diesel-powered aggregate plant, ready-mix concrete plant, and recycle plant, do not involve odor-generating sources aside from direct exhaust diesel emissions. Because exhaust from diesel-powered equipment dissipate rapidly with distance, and because the Quarry Site spans a relatively large area (349 acres), with diesel-powered stationary equipment located towards the center of the site (shown on Figure 2-8, "Proposed Plant Site Mining Plan," and Figure 2-9, "Proposed Quarry Site Mining Plan," of Chapter 2, "Project Description," of this Draft EIR) and diesel-powered excavation equipment outside of setbacks from the property lines (described above in Section 2.5.2.2, "Quarry Site Mine Plans," of Chapter 2), it is unlikely that diesel odors generated on the Quarry Site would be perceptible outside of the site. It is also unlikely that diesel exhaust odors would reach the nearby sensitive receptors, the nearest of which is located 275 feet from the Quarry Site. Therefore, the potential for the operation of the diesel-powered equipment on the Quarry Site to generate odors that would adversely affect a substantial number of people would be less than significant.

Upon the completion of mining on the Plant Site and Quarry Site, the project sites would be reclaimed to open space and open water land uses. Stagnant water can lead to odors. As described in the Plant Site Groundwater Conditions Report (Appendix G-3), groundwater would flow through the reclaimed pond on the Plant Site from the northeast to the southwest. As described in the proposed Surface Mining and Reclamation Plan (SMRP) (Appendix B), the continuous flow of groundwater would minimize the potential occurrence of odor due to stagnation. Similarly, the Quarry Site Groundwater Conditions Report (Appendix G-4) indicates that groundwater would flow through the reclaimed lake from the northeast to the southwest. Additionally, the lake would be approximately 100 feet deep. In a lake this deep, in the summer and winter, the water would become stratified into different temperature layers which do not mix. Twice a year, in the fall and spring, the waters at all layers overturns and equalizes the temperatures at all depths. As described in the proposed SMRP (Appendix B), seasonal vertical movement of water and lateral groundwater movement would preclude stagnation, and therefore, odors due to stagnation would not occur. Therefore, potential of the proposed land uses to generate odors would be less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.3-4: *Asphalt Plant Emissions Controls*

The following design features shall be incorporated into project plans to mitigate VOC, SVOC, and/or SO_2 emissions:

1) *The type of asphaltic cement produced by on-site plants affects odorous emissions.*

Some asphaltic cements have lower VOC/SVOC emissions than others. Therefore, asphaltic cements with lower VOC/SVOC emissions, as approved by the SJVAPCD, shall be used to the extent feasible.

2) *To reduce VOC emissions, periodic burner tune-ups shall be implemented.*
3) *Prior to issuance of a building permit for the proposed Asphalt Plant, project plans shall show that mixing drum vapors will be routed back to the dryer burner. Implementation of this provision shall be verified by Imperial County Building Inspectors prior to authorizing operation.*

Level of Significance After Mitigation: Less than significant.

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4.4—BIOLOGICAL RESOURCES

This section of the Draft EIR describes existing biological resources near the Quarry Site and Plant Site (collectively project sites), including special-status plant, wildlife, and invertebrate species and their habitat; summarizes applicable jurisdictional laws and regulations; and presents the significance criteria and thresholds for the evaluation of impacts to biological resources. This section then describes analysis methodologies and identifies the potential impacts to biological resources from the proposed project. Measures to mitigate potential impacts are recommended, as appropriate.

The information in this section is based on peer-reviewed Applicant prepared studies and publicly available sources. The Applicant-prepared studies used are:

- *Rockfield Modification Project Plant Site Habitat Assessment, Fresno County, California*. Prepared by ELMT Consulting. Updated December 2024. (Appendix E-1, "Plant Site Habitat Assessment")
- *Rockfield Modification Project Quarry Site Habitat Assessment, Fresno County, California*. Prepared by ELMT Consulting. Updated December 2024. (Appendix E-2, "Quarry Site Habitat Assessment")
- *Results of a Special-Status Plant Survey for the Rockfield Aggregate Mine Expansion Project Located in Friant, Fresno County, California.* Prepared by Michael Baker International. August 11, 2017. (Appendix E-3, "Focused Special-Status Plant Survey Report")
- *Effect of Nearby Blasting on Salmon in San Joaquin River*. Prepared by Vibra-Tech. August 11, 2021. (Appendix E-4, "Effects of Blasting on Fish")
- *Potential Groundwater Dependent Vegetation Survey for CEMEX's Rockfield Modification Project – Plant Site Located in Fresno County, California*. Prepared by ELMT Consulting. January 3, 2024. (Appendix E-5, "Groundwater Dependent Vegetation Survey")

The *Rockfield Modification Project Plant Site Habitat Assessment* (Plant Site Habitat Assessment (Appendix E-1)) and *Rockfield Modification Project Quarry Site Habitat Assessment* (Quarry Site Habitat Assessment (Appendix E-2)) were initially developed in May 2020 and peer reviewed by County-retained WRA Environmental Consultants in June 2020. The peer review letter report is on file with the County. A *Response to WRA's June 25, 2020, Peer Review Comments on ELMT's Habitat Assessments for the Rockfield Quarry Site and Plant Site* was completed by ELMT Consulting in December 2020. The Response to Comments adequately addressed the peer reviewer's comments and questions.

Both the Plant Site and Quarry Site habitat assessments were again updated in October 2021 and March 2022 in response to comments received from the California Department of Fish and Wildlife (CDFW) in June 2020 and in response to peer review comments provided on the habitat assessments by Benchmark Resources and WRA Environmental Consultants. Additional minor modifications in the text of both reports were made in January 2024 and again in December 2024.

4.4.1 Environmental Setting

This section discusses the existing biological resources conditions within and adjacent to the Plant Site and Quarry Site. Methods for evaluating site conditions, including literature review and field surveys, are described first, which is followed by a description of the habitat types and species composition at the project sites.

4.4.1.1 Literature Review

Prior to conducting the field surveys, a literature review and records search was conducted for special-status biological resources potentially occurring on or within the vicinity of the Plant Site and Quarry Site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the project sites were determined through a query of the CDFW QuickView Tool in the Biogeographic Information and Observation System (BIOS), California Natural Diversity Database (CNDDB) Rarefind 5, the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of special-status species published by CDFW, and the U.S. Fish and Wildlife Service (USFWS) species listings.

All available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the Plant Site and Quarry Site were reviewed to understand existing site conditions and note the extent of any disturbances that have occurred on the project sites that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status and non-special-status biological resources, as well as the following resources:

- Google Earth Pro historic aerial imagery (1998—2018);
- United States Department of Agriculture Natural Resource Conservation Service Web Soil Survey (2019);
- USFWS Critical Habitat designations for Threatened and Endangered Species and Primary Constituent Elements for California tiger salamander and California fairy shrimp; and

- USFWS and CDFW Interim Guidance and Onsite Assessment and Field Surveys for Determining Presence or a Negative Finding of California Tiger Salamander (2003).

4.4.1.2 Field Surveys

ELMT biologists inventoried and evaluated the extent and conditions of the plant communities found within the Plant Site and the Quarry Site on April 30, 2019. On June 14, 2021, ELMT biologists conducted additional surveys that documented the habitat conditions between the Plant Site and San Joaquin River, between the Plant Site and Little Dry Creek, and along the San Joaquin River within a ½-mile of the Quarry Site. An additional survey of potential groundwater dependent vegetation within 500 feet of the Plant Site was conducted by ELMT biologists in January 2024.

Plant communities identified on aerial photographs during the literature review were verified in the field by walking 10-meter (approximately 33 feet) transects throughout the plant communities and along boundaries between plant communities. In addition, aerial photography was reviewed prior to the site investigation to locate potential natural wildlife corridors and linkages that may support the movement of wildlife through the area. These areas identified on aerial photography were then walked during the habitat assessment.

Special attention was paid to any special-status habitats and/or undeveloped, natural areas, which have a moderate or higher potential to support special-status plant and wildlife species. Areas determined to provide suitable habitat for special-status plant and wildlife species were closely surveyed for signs of presence during the habitat assessment. Attention was given to the suitability of habitats on the Plant Site to support California tiger salamander (*Ambystoma californiense*). All plant and wildlife species observed during the habitat assessment were recorded in a standard field notebook (included in Appendices E-1 and E-2). Plant species observed during the habitat assessment were identified by visual characteristics and morphology in the field. Unusual and less familiar plant species were photographed during the habitat assessment and identified in the laboratory using taxonomical guides. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or desert dry wash features were noted.

In addition to the field surveys conducted as part of the Quarry Site Habitat Assessment, focused surveys of the Quarry Site were conducted on April 25, 2017, May 8 and 9, 2017,

and June 29, 2017, to coincide with the flowering periods of special-status plant species known to occur in the vicinity of the Quarry Site (Appendix E-3). Specifically, the surveys focused on the presence/absence of succulent owl's-clover (*Castilleja campestris* var. *succulenta*), a federally threatened and state endangered species, San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*), a federally threatened and state endangered species, hairy Orcutt grass (*Orcuttia pilosa*), a federally endangered and state endangered species, Hartweg's golden sunburst (*Pseudobahia bahiifoli*a), a federally endangered and state endangered species and several other special-status plant species known to occur in the vicinity of the Quarry Site. Special-status species and survey findings are described below in Section 4.4.1.8, "Special-Status Biological Resources."

4.4.1.3 Vegetation

Plant Site Vegetation

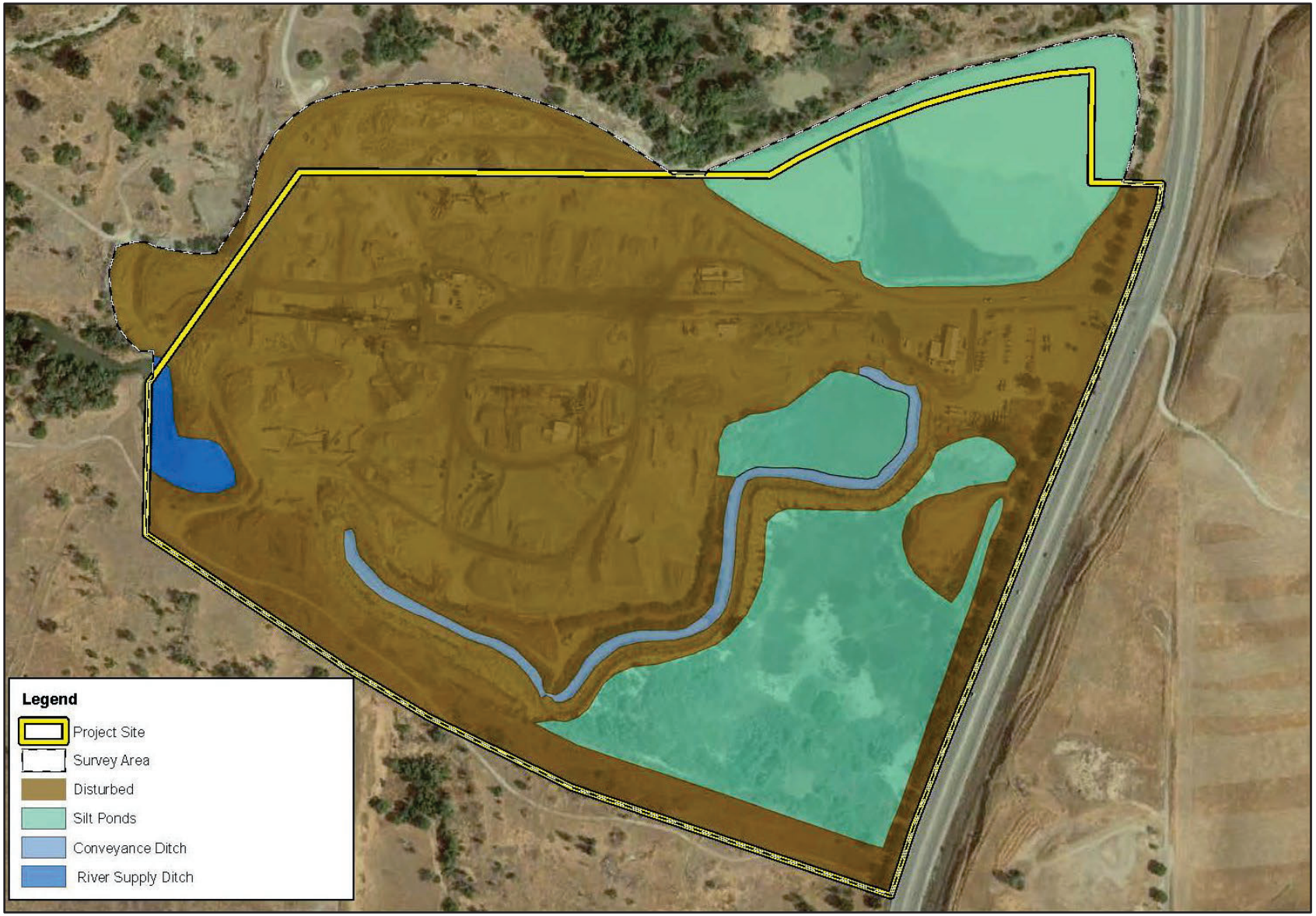
The Plant Site contains four land cover types classified as disturbed, silt ponds (aka settling ponds), river supply ditch, and a conveyance ditch for wash water. These land use types are shown on Figure 4.4-1, "Plant Site Land Cover Types," and described below.

Disturbed (96.24 Acres)

Disturbed areas are found throughout the western half of the Plant Site, as well as along the eastern boundary. These areas are routinely exposed to anthropogenic disturbances associated with the on-site mining activities and vehicle traffic. Surface soils within these areas are generally devoid of vegetation and have been heavily disturbed/compacted from on-site mining activities including grading, excavation, material processing, and equipment storage.

Silt Ponds (37.86 Acres)

Three silt ponds are found in the eastern half of the site that receive waste wash water from aggregate processing operations. The majority of each pond is open water and unvegetated. These ponds are routinely maintained by dredging to remove built up silts in order to maintain the capacity of the ponds. This activity also results in the periodic removal of vegetation that colonizes the shorelines of the ponds. Vegetation identified in the shoreline areas includes cattails (*Typha sp.*), bulrush (*Schoenoplectus californicus*), spiny rush (*Juncus acutus*), mulefat (*Baccharis salicifolia*), mugwort (*Artemesia vulgaris*), umbrella sedge (*Cyperus squarrosus*), and sandbar willow (*Salix exigua*).



SOURCE: ELMT Consulting 2022a; arranged by Benchmark Resources in 2023
Notes: Image not printed to scale.

Plant Site Land Cover Types
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Conveyance Ditch (2.43 Acres)

A narrow conveyance ditch conveys used wash water from the aggregate processing plant to the onsite silt ponds. This ditch was created in upland habitat within previously mined areas. This ditch is routinely maintained by dredging to remove built up silts in order to keep the ditch clear and allow the ditch to fully function as part of the mining and processing of aggregate. This activity also results in the periodic removal of the scattered patches of upland and riparian vegetation that colonize along its banks. Vegetation identified areas along the ditch banks includes cattails, bulrush, mulefat, sandbar willow, tree tobacco (*Nicotiana glauca*), and sweetclover (*Mililotus albus*).

River Water Delivery Ditch (1.25 Acres)

A small river water delivery ditch was created to convey water from the San Joaquin River to the aggregate plant for use in washing aggregate. The delivery ditch terminates just inside the western boundary of the Plant Site. The onsite portion of this delivery ditch is open water and generally unvegetated.

Quarry Site Vegetation

The only plant community observed within the boundaries of the Quarry Site during the field survey were scattered patches of non-native annual grasslands, totaling 47.95 acres. This habitat occurs along the eastern boundary of the quarry, adjacent to North Friant Road. The remaining land use types on the Quarry are classified as disturbed, ponded pits, and developed. The Quarry Site also includes a number of isolated, mature, native Valley oak trees and mature, non-native Eucalyptus trees that have been preserved. The land use types and tree locations are shown on Figure 4.4-2, "Quarry Site Land Cover Types," and described below.

Non-native Grassland (47.21 Acres)

The non-native grassland plant community is located along the eastern boundary of the Quarry Site abutting N. Friant Road. This plant community is dominated by wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), foxtail brome (*Bromus madritensis* ssp. *rubens*), downy brome grass (*Bromus tectorum*), and Mediterranean grass (*Schismus barbatus*).

Native Valley Oak Trees

Valley oak (*Quercus lobata*) is an endemic tree to California that requires year-round access to groundwater. Valley oak is one of the largest oak trees in North American and may exceed 10 feet in diameter and can surpass 100 feet in height. A few older, mature oaks are found on the southern end of the Quarry Site and along the central

and northern areas along the west side of the Quarry Site, but do not occur in sufficient numbers to be considered an oak woodland.

Non-Native Eucalyptus Trees

Blue gum eucalyptus (*Eucalyptus globulus*) trees are an invasive non-native species in North America and considered a threat to biological diversity of native habitats. The species was imported to North American in the 1850s as ornamentals and for timber and fuel. Because the species requires water to thrive, they are not a problem in drier regions of the Central Valley. However, there are several large eucalyptus trees along the western boundary of the Quarry Site near the San Joaquin River.

Disturbed (254.99 Acres)

Disturbed areas are found throughout the western two-thirds of the Quarry Site. These areas are routinely exposed to anthropogenic disturbances associated with the on-site mining activities and vehicle traffic. Surface soils within these areas are generally devoid of vegetation and have been heavily disturbed/compacted from on-site mining activities including grading, excavation, material processing, and equipment storage.

Ponded Pits (44.70 Acres)

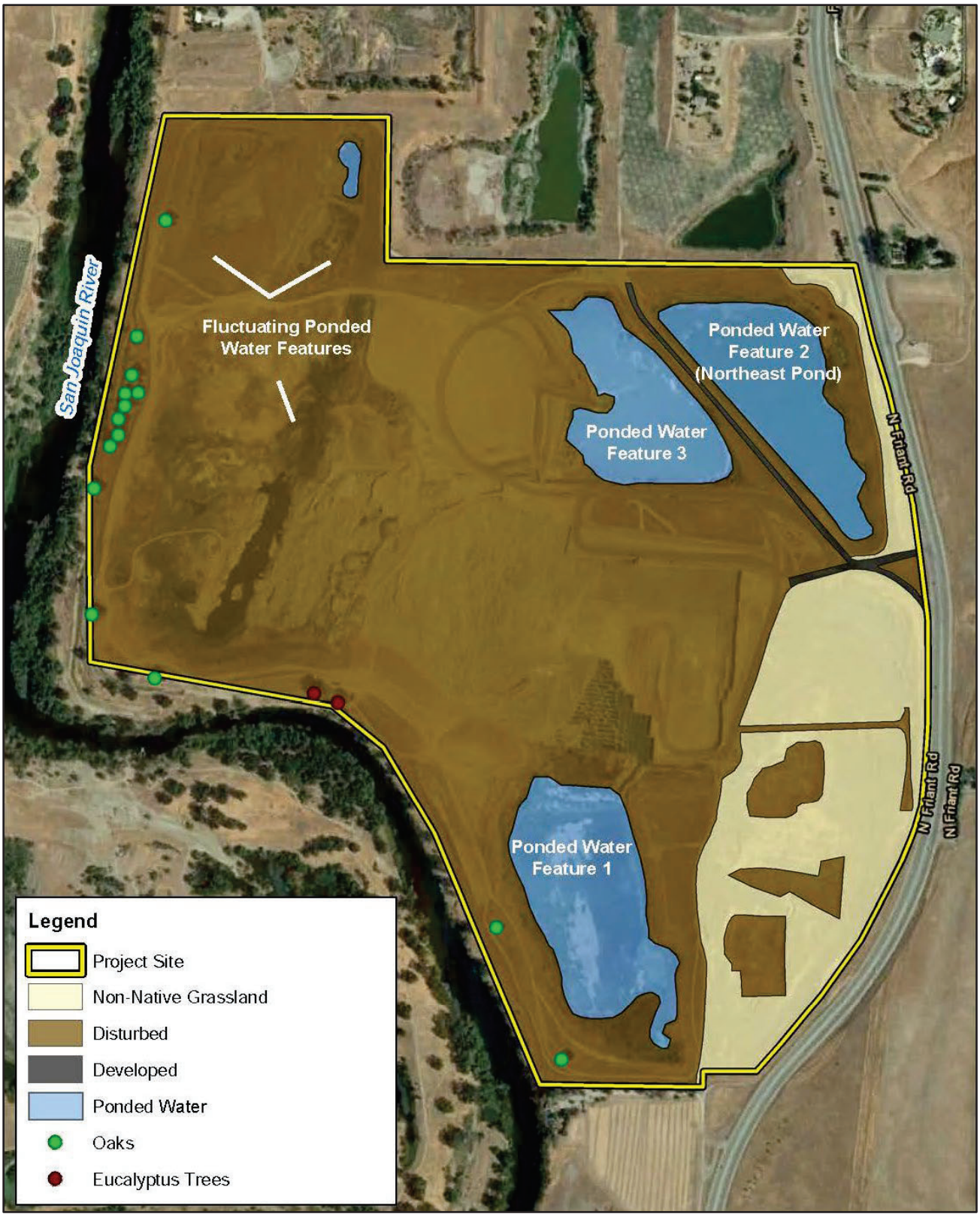
Temporary ponded pits that have formed from current and historic mining operations containing surface runoff from rainfall and/or groundwater are found in the eastern half of the Quarry Site. From reviewing historical aerial photos of the Quarry Site, the water level of the ponds fluctuates due to seasonal changes in the surface water runoff and water table. In addition, water is pumped from the ponds to accommodate mining activities, to water trucks for use as dust control, to the existing reclaimed pond in the northeast corner of the Quarry site for groundwater recharge, and to existing groundwater recharge trenches along the western boundary of the Quarry site.

Developed (2.10 Acres)

Developed areas within the survey area consisted of paved access roads within the eastern portion of the quarry site.

Riparian Habitat and Upland Vegetation Adjacent to the Plant Site and Quarry Site

Riparian habitats occur west of the Plant Site and Quarry Site in association with the San Joaquin River and north of the Plant Site in association with Little Dry Creek. The vegetation types vary from open vegetation to heavily forested areas with dense undergrowth.



SOURCE: ELMT Consulting 2022b; arranged by Benchmark Resources in 2023
Notes: Image not printed to scale.

Quarry Site Land Cover Types
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The heavily forested areas consist of Great Valley mixed riparian forest. Near the Plant Site, marsh vegetation is found in scattered pockets along the banks of the San Joaquin River and Little Dry Creek. Upland vegetation occurs between the banks and the Plant Site and consists of non-native grassland and scattered valley oaks woodland. Similarly, upland vegetation occurs on the upper banks, between the San Joaquin River and the Quarry Site, and consists primarily of non-native grassland. The various land cover types within a ½-mile buffer of the Plant Site and Quarry Site are shown in Figure 4.4-3, "Habitat Types Within 0.5-Mile Buffer of Plant Site," and "Figure 4.4-4, "Habitat Types Within 0.5-Mile Buffer of Quarry Site."

Groundwater Dependent Vegetation

A survey was conducted of potential groundwater dependent vegetation that occur within 500-feet of the Plant Site (ELMT 2024c; see Appendix E-5 of this Draft EIR). The two dominant potential groundwater dependent species within the survey area were mulefat and sandbar willow. Several tree species that were found in more moderate numbers include cottonwood, black willow, elderberry and valley oak. Collectively these six species constituted 97% of the potential groundwater dependent vegetation. The remaining 3% include additional tree species (walnut, eucalyptus, salt cedar, arroyo willow and black oak) and different shrub or aquatic species (buttonbush, California blackberry, nettle, cattail, California bulrush, and umbrella sedge).

4.4.1.4 Wildlife

Plant communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species that were observed or are expected to occur within the Plant Site and Quarry Site.

Plant Site Wildlife

Fish

The silt ponds located within the boundaries of the Plant Site provide sources of water and habitat for fish species known to occur within the general facility of the Plant Site. The ponds contain water year around, but water levels fluctuate due to varying volume of used process water pumped back and forth between the ponds and the aggregate plant, limiting the variety of fish species that can occur within silt ponds. Although not identified onsite, fish species that could potentially occur include Mosquitofish (*Gambusia affinis*), catfish (*Ictalurus* sp.) and largemouth bass (*Micropterus salmoides*).

Amphibians

The silt ponds within the boundaries of the Plant Site provide sources of water and habitat for populations of amphibians. Amphibian species observed during the habitat assessment included American bullfrog (*Lithobates catesbeianus*) and Sierran treefrog (*Pseudacris sierra*). Other amphibians that could occur within the boundaries of the survey area include the western toad (*Anaxyrus boreas*) and western spadefoot (*Spea hammondii*).

Reptiles

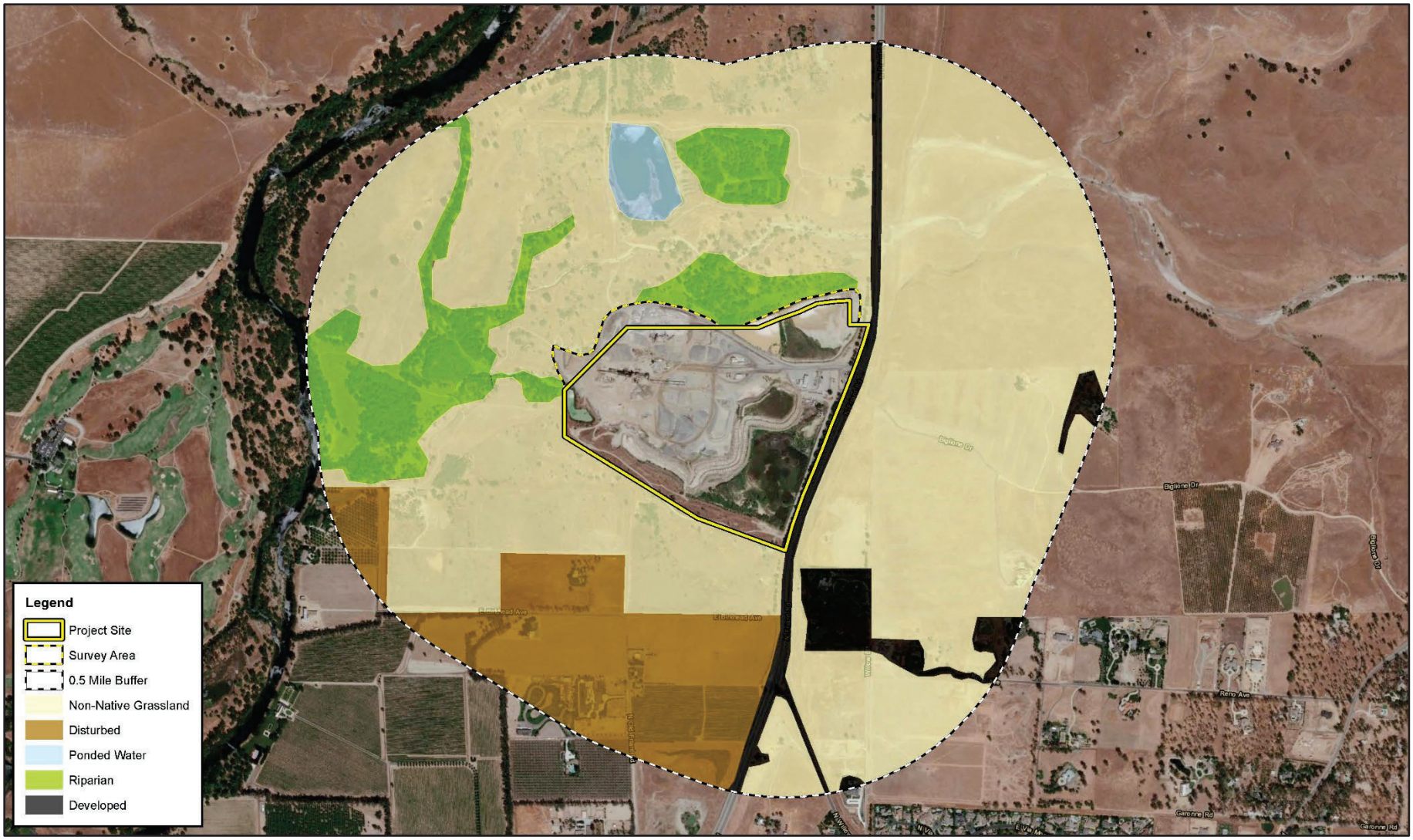
The western side-blotched lizard (*Uta stansburiana elegans*) was the only reptilian species observed during the habitat assessment. The habitat within the Plant Site is suitable for reptilian species such as California whiptail (*Aspidoscelis tigris munda*), pacific gopher snake (*Pituophis catenifer catenifer*), California kingsnake (*Lampropeltis californiae*) and northern pacific rattlesnake (*Crotalus oreganus oreganus*).

Avian

The Plant Site, primarily within the silt ponds, provides suitable foraging, nesting, and cover habitat for a variety of resident and migrant bird species. Avian species identified during the habitat assessment included red-winged blackbird (*Agelaius phoeniceus*), red-tailed hawk (*Buteo jamaicensis*), killdeer (*Charadrius vociferous*), American coot (*Fulica americana*), common yellowthroat (*Geothlypis trichas*), pied-billed grebe (*Podilymbus podiceps*), northern rough-winged swallow (*Stelgidopteryx serripennis*), tree swallow (*Tachycineta bicolor*), and western kingbird (*Tyrannus verticalis*).

Mammals

Mule deer (*Odocoileus hemionus*), California ground squirrel (*Otospermophilus beecheyi*), and Audubon's cottontail (*Sylvilagus* audubonii) were observed during the habitat assessment. The Plant Site and surrounding areas have the potential to support a limited variety of mammalian species including coyote (*Canis latrans*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), deer mice (*Peromyscus maniculatus*), raccoons (*Procyon lotor*), and Virginia opossums (*Didelphis virginiana*).



SOURCE: ELMT Consulting 2022a; arranged by Benchmark Resources in 2023

Notes: Image not printed to scale.

Habitat Types Within 0.5-Mile Buffer of Plant Site

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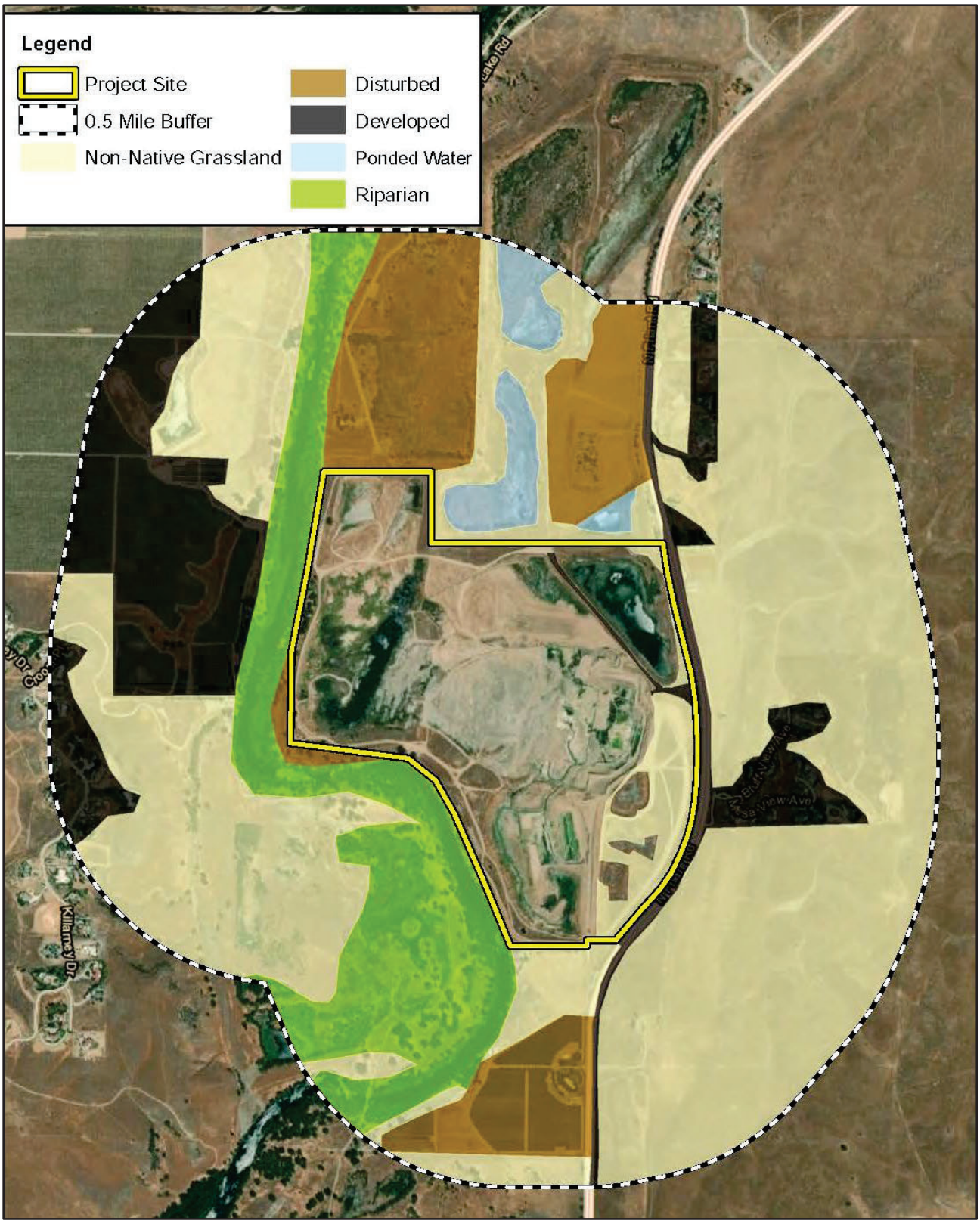

SOURCE: ELMT Consulting 2022b; arranged by Benchmark Resources in 2023
Notes: Image not printed to scale.

Habitat Types Within 0.5-Mile Buffer of Quarry Site
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Figure 4.4-4

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Quarry Site Wildlife

Fish

The temporary ponded pits located within the boundaries of the Quarry Site provide sources of water and habitat for populations of fish species known to occur within the Quarry Site. However, similar to the Plant Site, the water level of the ponds fluctuates limiting the variety of fish species that can occur within fluctuating ponds. Mosquitofish (*Gambusia affinis*) and largemouth bass (*Micropterus salmoides*) were observed surfacing during the habitat assessment. Other fish species that could potentially occur include green sunfish (*Lepomis cyanellus*) and catfish (*Ictalurus* sp.).

Amphibians

The temporary ponded pits within the boundaries of the Quarry Site provide sources of water and habitat for populations of amphibians. Amphibian species observed during the habitat assessment included American bullfrog (*Lithobates catesbeianus*) and Sierran treefrog (*Pseudacris sierra*). Other amphibians that have a low potential to occur within the boundaries of the survey area include western toad (*Anaxyrus boreas*). Western spadefoot (*Spea hammondii*) also has a low potential to occur within the boundaries of the Quarry Site.

Reptiles

Red-eared slider (*Trachemys scripta elegans*) and western side-blotched lizard (*Uta stansburiana elegans*) were the only reptilian species observed during the habitat assessment. The habitat within the Quarry Site is suitable for reptilian species such as California whiptail (*Aspidoscelis tigris* munda*),* pacific gopher snake (*Pituophis catenifer catenifer*), California kingsnake (*Lampropeltis californiae*) and northern pacific rattlesnake (*Crotalus oreganus oreganus*). Western pond turtle (*Emys marmorata*) has a low potential to occur within the boundaries of the Quarry Site.

Avian

The Quarry Site provides suitable foraging, nesting, and cover habitat for a variety of resident and migrant bird species. Avian species identified during the habitat assessment included red-winged blackbird (*Agelaius phoeniceus*), gadwall (*Anas strepera*), red- tailed hawk (*Buteo jamaicensis*), killdeer (*Charadrius vociferous*), American coot (*Fulica americana*), common yellowthroat (*Geothlypis trichas*), pied-billed grebe (*Podilymbus podiceps*), northern rough-winged swallow (*Stelgidopteryx serripennis*), tree swallow (*Tachycineta bicolor*), and western kingbird (*Tyrannus verticalis*). Other raptor species, including Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), and bald eagle (*Haliaeetus leucocephalus*) are known to occur along the San Joaquin River but were not observed onsite or within the general vicinity.

Mammals

Mule deer (*Odocoileus hemionus*), California ground squirrel (*Otospermophilus beecheyi*), and Audubon's cottontail (*Sylvilagus audubonii*) were observed during the habitat assessment. The Quarry Site and surrounding areas have the potential to support a limited variety of mammalian species including coyote (*Canis latrans*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), deer mice (*Peromyscus maniculatus*), raccoons (*Procyon lotor*), and Virginia opossums (*Didelphis virginiana*).

4.4.1.5 Nesting Birds

Some of the plant communities within and surrounding the Plant Site and Quarry Site provide suitable habitat for a variety of year-round and seasonal avian residents, as well as migrating songbirds that occur in the area. Non-raptor avian species present on the Plant Site and Quarry Site may nest on-site if conditions are favorable. Nesting birds are protected pursuant to the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs).

The riparian forest habitats located along the San Joaquin River west of the project sites and along Little Dry Creek on the northern boundary of the Plant Site provide nesting habitat for raptor species including Swainson's hawk (*Buteo swainsoni*), osprey (*Pandion haliaetus*), red-tailed hawk, and as bald eagle (*Haliaeetus leucocephalus*). A single osprey nest was observed in the riparian forest area approximately ½ mile north of the Quarry Site. No other active nests were observed during the habitat assessment.

Multiple pairs of tree swallows were observed occupying the various nest boxes located along the western and southern boundaries of the Quarry Site. Additionally, red- winged blackbirds were observed displaying nesting behavior within the various cattail stands found within the temporary ponded pits within the Quarry Site.

4.4.1.6 Migratory Corridors and Linkages

Habitat linkages provide links between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The San Joaquin River corridor is located approximately 0.6 mile west of the Plant Site and adjacent to the western boundary of the Quarry Site. The San Joaquin River corridor is considered a significant wildlife movement corridor that provides natural areas for wildlife to move through the region in search of food, shelter, or nesting habitat. Additionally, the San Joaquin River can be used as a wildlife movement corridor to facilitate movement further into the Central Valley. Little Dry Creek is approximately 0.1 mile north of the Plant Site and includes a riparian corridor with a connection to the San Joaquin River.

4.4.1.7 Wetlands and Waters of the State

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The U.S. Army Corps of Engineers (Army Corps) Regulatory Branch regulates discharge of dredge and/or fill materials into "waters of the United States" pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the state agencies, CDFW regulates alterations to streambed, pursuant to Section 1602 of the Fish and Game Code, and the Regional Water Quality Control Board (RWQCB) regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

The San Joaquin River is a Relatively Permanent Water with a surface hydrologic connection to the San Francisco Bay and ultimately the Pacific Ocean, a Traditional Navigable Water, as defined under Section 404 of the CWA.

Three silt ponds were identified in the eastern portion of the Plant Site (shown on Figure 4.4-1). A river supply ditch and a conveyance ditch and piping conveying used wash water from the aggregate plant to the silt ponds were visible in the area. The water levels of the ponds fluctuate due to the varying volume of used process water pumped to the ponds and water being recycled back to the aggregate plant from the ponds. Since the ponds, river supply ditch, and conveyance ditch were excavated wholly in the uplands; are routinely dredged to maintain water storage and conveyance capacity; and have been continually used to store and convey process water incidental to mining, these features do not to fall under the regulatory authority of the Corps. Under the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (State Wetlands Rule), these features should not be considered "waters of the state" because they are artificial wetlands constructed and maintained for "active surface mining – even if the site is managed for interim wetlands functions and values." (See State Wetlands Rule, Section II(3)(d)(viii).) Likewise, these features are not lakes or streambeds under Fish & Game Code Sections 1600 et seq., thus no notification to CDFW will be required.

Three large, ponded pits, referred to as "ponded water features" in this analysis and shown above on Figure 4.4-2 were identified on the Quarry Site along with an ephemeral swale along Friant Road. In addition, multiple fluctuating small, ponded water features were observed in the northwestern portion of the Quarry Site. Pumps conveying water into ditches and piping were visible in these areas to move the water throughout the Quarry Site to accommodate mining activities. This movement of water creates temporary holding basins/pools that exist for an unknown amount of time. Since the ponded water features were excavated wholly in the uplands, incidental to mining that subsequently filled with water and have been continually used to move water about the site, they were determined to not fall under the regulatory authority of the Corps. Under the State Wetlands Rule, these features are not considered "waters of the state" because they are artificial wetlands constructed and maintained for "active surface mining – even if the site is managed for interim wetlands functions and values." (See Draft State Wetlands Rule, § II(3)(d)(viii).) Likewise, these features are not lakes or streambeds under Fish & Game Code Sections 1600 et seq., thus no notification to CDFW will be required.

4.4.1.8 Special-Status Biological Resources

Special-status species considered for this analysis were based on queries of the CNDDB Rarefind 5, CNDDB QuickView Tool in BIOS, and the CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California. The reported locations of special-status plant and wildlife species as well as special-status plant communities in the Friant, Lanes Bridge, Little Table Mountain, and Millerton Lake West USGS 7.5-minute quadrangles were reviewed. The habitat assessment evaluated the conditions of the habitat(s) within the boundaries of the Plant Site and Quarry Site to determine if the existing plant communities, at the time of the survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species.

The literature search identified 11 special-status plant species, four special-status plant communities, and 29 special-status wildlife species as having potential to occur within the Friant, Lanes Bridge, Little Table Mountain, and Millerton Lake West USGS 7.5-minute quadrangles. Special-status plant and wildlife species were evaluated for their potential to occur within the Plant Site and Quarry Site based on habitat requirements, availability and quality of suitable habitat, and known distributions. "Appendix C" of the Plant Site Habitat Assessment (Appendix E-1 of this Draft EIR) and "Appendix C" of the Quarry Site Habitat Assessment (Appendix E-2 of this Draft EIR) present tables summarizing key information regarding the special-status species determined to have the potential to occur in the vicinity of the project sites, including the common name and scientific name for each species, regulatory status (federal, state, local, CNPS), habitat descriptions, whether the species was observed on-site, and potential for occurrence at

the project sites. The following set of criteria was used to determine each species' potential for occurrence at the project sites:

- **Present**: Species known to occur at the project sites based on CNDDB records and/or observed at the project sites during the biological surveys.
- **High**: Species known to occur on or in the vicinity of the project sites (based on CNDDB records within five miles and/or based on professional expertise specific to the project sites or species) and there is suitable habitat at the project sites.
- **Moderate**: Species known to occur on or in the vicinity of the project sites based on CNDDB records and there is moderate quality habitat within the project sites.
- **Low**: Species known to occur in the vicinity of the project sites and there is marginal habitat within the project sites **-OR-** Species is not known to occur in the vicinity of the project sites, however, there is suitable habitat on the project sites.
- **Presumed Absent**: Species is not known to occur on or in the vicinity of the project sites and there is no suitable habitat at the project sites **-OR-** Species was surveyed for during the appropriate season with negative results **-OR-** The project sites occur outside of the known elevation or geographic ranges.

Only those species that are known to be present or have a moderate or higher potential for occurrence on the Plant Site and/or Quarry Site are discussed further in the following sections.

Special-Status Plant Species

No special-status plant species, including the eleven species identified in the literature search as having the potential to occur within the Friant, Lanes Bridge, Little Table Mountain, and Millerton Lake West USGS 7.5-minute quadrangles, were observed on the Plant Site or Quarry Site during the field survey. In addition, no special-status plant species were observed on the Quarry Site during the focused sensitive plant surveys conducted in the 2017 blooming season (Appendix E-3).

The Plant Site has been subjected to a heavy regime of disturbances of over 99% of its area from active mining operations for 95 years. This sustained level of continuous disturbances has eliminated the naturally occurring plant communities that once occupied the Plant Site. Based on these conditions and on the findings of the habitat assessment investigations, special-status plant species are identified as "presumed absent" in the Plant Site Habitat Assessment (Appendix E-1).

The Quarry Site has been subjected to a heavy regime of disturbances of over 90% of its area from farming activities since the 1930's and from active mining operations for over

the past 30 years. This sustained level of continuous disturbances has eliminated the naturally occurring plant communities that once occupied the Quarry Site. Based on these conditions and on the findings of the focused field surveys and habitat assessment investigations, special-status plant species are identified as "presumed absent" in the Quarry Site Habitat Assessment (Appendix E-2).

Special-Status Plant Communities

No special-status plant communities, including the four communities identified in the literature search as having the potential to occur within the Friant, Lanes Bridge, Little Table Mountain, and Millerton Lake West USGS 7.5-minute quadrangles, are present within the Plant Site or Quarry Site based on the findings of the habitat assessment investigations (Appendices E-1 and E-2). However, the Great Valley Mixed Riparian Forest plant community is located near the project sites along the San Joaquin River and riparian habitat is also located north of the Plant site along Little Dry Creek.

Special-Status Wildlife Species

Of the 29 special-status wildlife species identified in the literature search as having the potential to occur within the Friant, Lanes Bridge, Little Table Mountain, and Millerton Lake West USGS 7.5-minute quadrangles, three species, Great egret (*Ardea alba*), great blue heron (*Ardea herodias*), and osprey (*Pandion haliaetus*), were observed within or over the Plant Site during the field surveys, and within or over the surrounding areas surveyed June 14, 2021. These same species were observed within or over the Quarry Site during the field surveys, and within or over the surrounding areas surveyed June 14, 2021.

Based on habitat requirements for specific special-status wildlife species and the availability and quality of habitats needed by each species, determinations for the potential occurrence of each species were made. Species that are known to be present or have a high or low potential for occurrence on the Plant Site and/or Quarry Site are summarized in Table 4.4-1, "Special-Status Wildlife Species." Although presumed absent, California tiger salamander, vernal pool fairy shrimp, and burrowing owl are included in Table 4.4-1 because these species are commonly of concern at sites in the Central Valley.

Both the Plant Site Habitat Assessment (Appendix E-1) and the Quarry Site Habitat Assessment (Appendix E-2) determined that the respective project sites have a low potential to provide suitable habitat for western pond turtle (*Emys marmorata*) and western spadefoot (*Spea hammondii*). Raptor species including bald eagle, Swainson's hawk, white-tailed kite, and osprey, have a moderate potential to forage over the project sites. However, no raptor species were observed foraging over the project sites during the surveys and nesting would be very unlikely to occur onsite. Abundant nesting habitat for raptors can be found offsite along the San Joaquin River west of the project sites. The

absence of native habitats on the project sites, combined with the continuing level of disturbances from ongoing mining operations would preclude raptor use of either project site for nesting.

Based on habitat requirements, availability/quality of habitat needed by each species, and known distributions, ELMT Consulting determined that all remaining special-status wildlife species are either presumed absent from the project sites or have such a low potential to occur that they need not be considered further. Please refer to the following sections for a detailed assessment of the potential occurrence of California tiger salamander, burrowing owl, vernal pool fairy shrimp, western pond turtle, western spadefoot, valley elderberry longhorn beetle, tricolored blackbird, and raptors.

California Tiger Salamander

CTS is a member of the salamander family Ambystomatidae (Mole Salamanders) and is endemic to California. It is a large, stocky salamander, with a broad, rounded snout, and small eyes that protrude from its head. California tiger salamander occurs in six populations from the Central Valley and Sierra Nevada foothills, from Yolo County south to Tulare County, and in the coastal valleys and foothills from Sonoma County south to Santa Barbara County. While California tiger salamander in Sonoma and Santa Barbara Counties are listed as endangered, they are listed as threatened in the Central Valley.

CTS habitat is generally characterized by seasonal ponds and vernal pools surrounded by grassland, oak savannah, and/or coastal scrub. It is not generally associated with streams or rivers but prefers isolated seasonal or ephemeral ponds for breeding. Preferred water depth of the isolated seasonal pools is generally between 15.75 and 31.5 inches. When not in breeding habitat, California tiger salamander prefers to inhabit upland areas. Small mammal burrows, especially from California ground squirrel and Botta's pocket gopher, are used heavily, and California tiger salamander spends most of its life underground in these burrows.

Winter rains trigger migrations in California tiger salamander from upland refugia habitat to breeding ponds. Studies have demonstrated that California tiger salamander regularly travel distances of approximately 2,100 feet between aquatic and terrestrial habitat. Eggs are attached to submerged vegetation or debris, and subsequently hatch into larvae within 10 to 28 days depending on water temperature. Development from tadpoles to metamorphosize can take upwards of four months in colder weather, and generally occurs between May and August.

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Table 4.4-1
Special-Status Wildlife Species

Scientific Name Common Name	Status		Habitat	Observed On-site	Potential to Occur on the Plant Site	Potential to Occur on the Quarry Site
Accipiter cooperii Cooper's hawk	Fed: CA:	None WL	Generally found in forested areas up to 3,000 feet in elevation, especially near edges and rivers. Prefers hardwood stands and mature forests but can be found in urban and suburban areas where there are tall trees for nesting. Common in open areas during nesting season.	No	**Moderate** The Plant Site provides suitable foraging habitat. Nesting habitat occurs offsite in adjacent areas.	**Moderate** The Quarry Site provides suitable foraging habitat. Nesting habitat occurs offsite in adjacent areas.
Agelaius tricolor tricolored blackbird	Fed: CA:	None Candidate **END**/SSC	Range is limited to the coastal areas of the Pacific coast of North America, from Northern California to upper Baja California. Can be found in a wide variety of habitat including annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields, cattle feedlots, and dairies. Occasionally forage in riparian scrub habitats along marsh borders. Basic habitat requirements for breeding include open accessible water, protected nesting substrate (freshwater marsh dominated by cattails, willows, and bulrushes [*Schoenoplectus* sp.]), and either flooded or thorny or spiny vegetation and suitable foraging space providing adequate insect prey.	No	**Low** The Plant Site provides suitable foraging and nesting habitat. However, per CNDDB, there are no known occurrences within the immediate vicinity of the Plant Site.	**Low** The Quarry Site does not provide suitable foraging and nesting habitat. CNDDB records show no known occurrences within the immediate vicinity of the Quarry Site.
Ambystoma californiense California tiger salamander	Fed: CA:	**THR** **THR**/WL	Nocturnal, and fossorial, spending most of their time underground in animal burrows. Frequents grassland, oak savanna, and edges of mixed woodland and lower elevation coniferous forest.	No	**Presumed Absent** There is no suitable habitat on the Plant Site and no CNDDB observations in the immediate area.	**Presumed Absent** The Quarry Site supports low quality breeding and inaccessible, low quality aestivation habitat for this species.
Aquila chrysaetos Golden eagle	Fed: CA:	None FP; WL	Occupies nearly all terrestrial habitats of the western states except densely forested areas. Favors secluded cliffs with overhanging ledges and large trees for nesting and cover. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats. Deeply cut canyons rising to open mountain slopes and crags are ideal habitat.	No	**Low** Suitable foraging and nesting habitat are found west of the Plant Site in the valley oak woodland.	**Presumed Absent** There is no suitable habitat within or adjacent to the Quarry Site.
Ardea alba great egret	Fed: CA:	None None	Yearlong resident throughout California, except for the high mountains and deserts. Feeds and rests in fresh, and saline emergent wetlands, along the margins of estuaries, lakes, and slow-moving streams, on mudflats and salt ponds, and in irrigated croplands and pastures.	Yes	**Present** This species was detected during the 2021 habitat assessment.	**Present** This species was detected during the 2017 habitat assessment.
Ardea herodias great blue heron	Fed: CA:	None None	Fairly common all year throughout most of California, in shallow estuaries and fresh and saline emergent wetlands. Less common along riverine and rocky marine shores, in croplands, pastures, and in mountains about foothills.	Yes	**Present** This species was detected during the 2021 habitat assessment.	**Present** This species was detected during the 2017 habitat assessment.
Athene cunicularia burrowing owl	Fed: CA:	None SSC	Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. The overriding characteristics of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation.	No	**Presumed Absent** The Plant Site provides line-of-sight opportunities favored by this species. A limited number of suitable burrows (>4 inches in diameter) for nesting and roosting are present; however, they occur directly adjacent to heavy machinery and other significant routine disturbances.	**Presumed Absent** The Quarry Site does not provide suitable foraging habitat. Additionally, there are no suitable burrows (>4 inches in diameter) for nesting or roosting.

Scientific Name Common Name	Status		Habitat	Observed On-site	Potential to Occur on the Plant Site	Potential to Occur on the Quarry Site
Branchinecta lynchi vernal pool fairy shrimp	Fed: CA:	**THR** None	Distributed from southern Oregon to southern California and associated with vernal pool habitats. Vernal pools are subject to seasonal variations such as duration of inundation and presence or absence of water at specific times of the year. Vernal pool fairy shrimp are dependent on the ecological characteristics of such variations.	No	**Presumed Absent:** There is no suitable habitat within or adjacent to the Plant Site.	**Presumed Absent** There is no suitable habitat within or adjacent to the Quarry Site.
Buteo swainsoni Swainson's hawk	Fed: CA:	None **THR**	Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	No	**Moderate** The Plant Site provides suitable foraging habitat. The adjacent, offsite riparian habitat provides suitable foraging and nesting habitat.	**Moderate** There is suitable foraging habitat but no nesting habitat on the Quarry Site. The adjacent, offsite riparian habitat provides suitable foraging and nesting habitat.
Circus hudsonius northern harrier	Fed: CA:	None SSC	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. Mostly found in flat, or hummocky, open areas of tall, dense grasses moist or dry shrubs, and edges for nesting, cover, and feeding.	No	**Moderate** The Plant Site provides marginal foraging habitat but no nesting habitat for this species. The adjacent, offsite grassland habitat provides suitable foraging habitat.	**Moderate** The Quarry Site provides marginal foraging habitat but no nesting habitat for this species. The adjacent, offsite grassland habitat provides suitable foraging habitat.
Coccyzus americanus occidentalis western yellow-billed cuckoo	Fed: CA:	**THR** **END**	In California, the breeding distribution is now thought to be restricted to isolated sites in Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys. Obligate riparian species with a primary habitat association of willow-cottonwood riparian forest.	No	**Low** The Plant Site and adjacent riparian area provide suitable foraging and nesting habitat. However, per CNDDB the last recorded occurrence of this species within the vicinity of the Plant Site was in 1883 (CNDDB)	**Presumed Absent** There is no suitable habitat on the Quarry Site.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	Fed: CA:	**THR** None	Found in riparian habitat only in the vicinity of its host plant, the elderberry species such as the Mexican elderberry (*Sambucus mexicana*)	No	**Presumed Absent** There are no elderberries or riparian habitats on the Plant Site capable of supporting this species.	**Presumed Absent** There are no elderberries or riparian habitats on the Quarry Site capable of supporting this species.
Elanus leucurus White-tailed kite	Fed: CA:	None FP	Found in grasslands, open woodlands, savannas, marshes, and cultivated fields	No	**Moderate** The Plant Site provides foraging habitat but no nesting habitat for this species. There is suitable nesting habitat along the adjacent San Joaquin River and Little Dry Creek.	**Moderate** The Quarry Site provides foraging habitat but no nesting habitat for this species. There is suitable nesting habitat along the adjacent San Joaquin River.
Emys marmorata western pond turtle	Fed: CA:	None SSC	Requires both aquatic and terrestrial habitats. Uses permanent and seasonal aquatic habitats including rivers, sloughs, lakes, reservoirs, ponds, and irrigation canals. Moves onto land for nesting, overwintering, dispersal, and basking.	No	**Low** The Plant Site provides marginal habitat for this species. The adjacent offsite riparian areas associated with the San Joaquin River and Little Dry Creek provide suitable habitat.	**Low** There is marginal habitat on the Quarry Site. The adjacent offsite riparian areas associated with the San Joaquin River provides suitable habitat.
Eremophila alpestris actia California horned lark	Fed: CA:	None WL	Occurs in meadows, grasslands, open fields, prairie, and alkali flats. This subspecies is typically found in coastal regions.	No	**Low** The Plant Site provides marginal foraging and nesting habitat.	**Low** The Quarry Site provides marginal foraging habitat for this species.
Erethizon dorsatum North American porcupine	Fed: CA:	None None	Broad variety of habitats including open tundra, deciduous forests, and desert chaparral. Occupies dens in rock outcroppings and trees. Generalist herbivore, feeding habits change seasonally.	No	**Moderate** The Plant Site and adjacent riparian area provide suitable foraging and denning habitat.	**Moderate** The Quarry Site provides suitable foraging and denning habitat

Scientific Name Common Name	Status		Habitat	Observed On-site	Potential to Occur on the Plant Site	Potential to Occur on the Quarry Site
Gonidea angulate Western ridged mussel	Fed: CA:	None None	Occurs on the bottom of streams, rivers, and lakes with substrates that vary from gravel to firm mud, and include at least some sand, silt, or clay.	No	**Low** There is suitable habitat present within the adjacent San Joaquin River, outside the boundaries of the Plant Site.	**Low** There is suitable habitat present within the San Joaquin River, outside the boundaries of the Quarry Site.
Haliaeetus leucocephalus Bald eagle	Fed: CA:	Delisted **END**/FP	Often found near large bodies of water such as coastal areas, rivers, swamps, and large lakes	No	**Moderate** There is suitable foraging and nesting habitat along the San Joaquin River.	**Moderate** There is potential foraging habitat onsite. The offsite riparian habitat along the San Joaquin River provides suitable nesting habitat.
Lanius ludovicianus Loggerhead shrike	Fed: CA:	None SSC	Often found in broken woodlands, shrublands, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	No	**Moderate** The Plant Site provides suitable foraging and nesting habitat.	**Moderate** The offsite riparian habitat present along the San Joaquin River provides suitable nesting habitat.
Lasiurus blossevillii western red bat	Fed: CA:	None SSC	Roosting sites are found in the foliage of trees and shrubs in forests, most commonly 1.5 to 12 meters above ground. Often relies on riparian trees for roosting and foraging and has been associated with mature stands of cottonwood, sycamore and willows adjacent to streams.	No	**Moderate** The Plant Site and adjacent riparian area provide suitable foraging and roosting habitat.	**Moderate** There is potential foraging habitat on Quarry Site. The offsite riparian habitat along the San Joaquin River provides suitable roosting habitat.
Lasiurus cinereus hoary bat	Fed: CA:	None None	Thought to prefer trees at the edge of clearings but have also been found in trees in heavy forests, open wooded glades, and shade trees along urban streets and in city parks. They roost 3 to 5 meters above ground during the day, usually in the foliage of trees. They prefer dense leaf coverage above and an open area below. They also prefer trees that border clearings.	No	**Moderate** The Plant Site provides suitable foraging and roosting habitat.	**Moderate** There is potential foraging habitat onsite. The offsite riparian habitat along the San Joaquin River provides suitable roosting habitat.
Lavinia exilicauda exilicauda Sacramento hitch	Fed: CA:	None None	Inhabits warm, lowland waters including clear streams, turbid sloughs, lakes, and reservoirs. Prefers shallow stream habitats with small gravel to mud substrates. Spawning takes place over gravel riffles and occasionally on vegetation.	No	**Moderate** There is suitable habitat present within the San Joaquin River.	**Low** There is suitable habitat present within the San Joaquin River but not within the Quarry Site.
Linderiella occidentalis California linderiella	Fed: CA:	None None	Currently known from the Central Valley and Coast ranges of California. Has been documented on most land forms, geologic formations, and soil types supporting vernal pools in California.	No	**Presumed Absent** The soils within the Plant Site have been disturbed as a result of the excavation operations. There are no vernal pools within the project area or adjacent riparian areas.	**Low** The soils within the Quarry Site have been disturbed as a result of the excavation operations. However, this species has been documented on adjacent land and the ephemeral pool on-site could provide possible habitat for this species.
Lytta moesta moestan blister beetle	Fed: CA:	None None	Occurs in central California and is associated with grassland habitats and vernal pools. Larvae are parasitic on solitary bees.	No	**Low** There is low quality habitat present within the Plant Site.	**Presumed Absent** There is no suitable habitat within or adjacent to the Quarry Site.
Mustela frenata xanthogenys San Joaquin long-tailed weasel	Fed: CA:	None None	Occurs in a wide variety of habitats, usually near water. Preferred habitats include brushland, open woodlands, field edges, riparian grasslands, swamps, and marshes. Dens in ground burrows, under stumps, or beneath rock piles. Usually uses abandoned burrows.	No	**High** There is suitable habitat present along the San Joaquin River.	**Low** There is suitable habitat present along the San Joaquin River but not within the Quarry Site.
Pandion haliaetus osprey	Fed: CA:	None WL	Occurs in a variety of plant communities in association with riparian habitats including shrublands, grasslands, swamps, and coniferous and deciduous forests. In California, ospreys are primarily associated with ponderosa pine (Pine ponderosa) and mixed-conifer types.	Yes	**Present** This species was detected foraging over the Valley Oak Woodland west of the Plant Site during the 2021 habitat assessment.	**Present** This species was detected foraging over the site during the 2017 habitat assessment.

Scientific Name **Common Name**	**Status**		**Habitat**	**Observed On-site**	**Potential to Occur on the Plant Site**	**Potential to Occur on the Quarry Site**
Spea hammondii western spadefoot	Fed: CA:	None SSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washed, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	No	**High** There is suitable habitat present along the San Joaquin River.	**Low** There is marginal habitat within the Quarry Site. The offsite riparian habitat along the San Joaquin River provides suitable nesting habitat.
Thamnophis gigas giant garter snake	Fed: CA:	THR THR	Inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley.	No	**Low** There is suitable habitat present along the San Joaquin River. However, per CNDDB this species has not been observed in the general area.	**Low** There is suitable habitat present along the San Joaquin River. However, per CNDDB this species has not been observed in the general area.
Xanthocephalus xanthocephalus yellow-headed blackbird	Fed: CA:	None SSC	Nests in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds. Forages in emergent wetland and moist, open areas, especially cropland and muddy shores of lacustrine habitat. Restricted distribution in Central Valley in winter, occurring mainly in the western portion.	No	**High** There is suitable habitat located along the San Joaquin River.	**Presumed Absent** There is no suitable habitat within the Quarry Site. There is suitable foraging and nesting habitat present along the San Joaquin River.

Table Source: Appendix E-1 and Appendix E-2.
Table Notes:
CNDDB—California Natural Diversity Database
U.S. Fish and Wildlife Service (USFWS)—Federal
END—Federal Endangered
THR—Federal Threatened
California Department of Fish and Wildlife (CDFW)—California
END—California Endangered
THR—California Threatened
SSC—California Species of Concern
WL—Watch List
FP—California Fully Protected

California Tiger Salamander Potential to Occur on Plant Site

The nearest observations of California tiger salamander to the Plant Site occurred 1.0 mile to the east in 2002 and 1.0 miles to the south in 1992. Both observations were east of Friant Road, a four-lane County road. The lack of available (reachable) upland refugia habitat, the lack of breeding habitat, and the lack of a connection between the two required habitats for California tiger salamander (due to ongoing operations) preclude the presence of this species on the Plant Site. Further, historic records show that California tiger salamander does not occupy the long band of habitat south of Millerton Lake to Highway 41 that is isolated between the San Joaquin River and Friant Road, including the Plant Site.

Within the Plant Site there are 96.24 acres (69% of the onsite habitats) of heavy disturbed land that no longer provide naturally occurring or created habitat. There are no areas of non-native grasslands within the Plant Site. There are 35.86 acres of silt ponds which contain water year around and consist of recycled discharge water from mining operations. The Plant Site is at the outer range of the Central Population of California tiger salamander and is located approximately 2.0 miles southwest of California tiger salamander Critical Habitat in Fresno County and 1.0 mile east of California tiger salamander Critical Habitat located in Madera County across the San Joaquin River, which is 0.6 mile west of the site.

It is important to note that a large band of habitat exists from Millerton Lake to the north and continuing south past the Plant Site to Highway 41 and between the San Joaquin River on the west and Friant Road on the east between (see Exhibit 7). Within this isolated stretch of mostly non-native habitats that includes active agricultural, mining operations and non-native grasslands, there are no existing vernal complexes and no recorded occurrence of California tiger salamander. These data suggest that the presence of barriers created by the San Joaquin River, a perennial river, on the west and by Friant Road, a 4-lane County road, on the east has disrupted migration by California tiger salamander and consequently prevented the occupation of non-native grasslands by California tiger salamander within this large band of habitat, which includes the Plant Site.

The perennial nature of the onsite ponds has also resulted in the presence of bull frogs in all ponds. Bull frogs readily prey on California tiger salamander and other small fish and amphibian species. Due to the perennial or year-round presence of water in the onsite ponds, the depth of the ponds, and the known presence of bull frog, the onsite ponds do not provide suitable breeding habitat for California tiger salamander.

Based on the extensive (over 99%) disturbance of the Plant Site during its 95-year history of mining (i.e., heavily disturbed habitat that does not support native grasslands or any other upland habitat required by California tiger salamander for estivation outside of breeding season), combined with silt ponds that accumulate process water from mining operations and maintain the water year-round, and the presence of bullfrogs in the ponds, the Plant Site does not provide breeding habitat or upland aestivation habitat needed by the species. The Plant Site is considered unsuitable for California tiger salamander and the species is presumed absent.

California Tiger Salamander Potential to Occur on Quarry Site

The nearest observation of California tiger salamander to the Quarry Site occurred 0.5 miles to the northeast in 2008 and 0.5 miles to the east in 1993. Both observations were east of Friant Road, a four-lane highway.

Within the 349-acre Quarry Site, land uses and available vegetation and/or habitat types are in constant flux, generally decreasing, due to the ongoing mining operations which have been continuous for over 30 years. During the 2019 habitat assessment, it was determined that mining has removed soils down to bedrock, 20 to 50 feet deep, on 254.99 acres or 73% of the Quarry Site. These areas do not support native habitats or vegetation. In 2019, there were also 47.21 acres of non-native grasslands, approximately 14%, and 44.70 acres of open ponds, approximately 13%.

The 47.21 acres of non-native grasslands are restricted to the eastern boundary of the Quarry Site and continue to be actively mined for aggregate. The non-native grasslands are bordered on their east side by Friant Road, a 4-lane County road, and separated on their west side from the rest of the mining site by sheer walls created by the ongoing removal of aggregate. The isolation of the non-native grasslands between Friant Road on the east and active mining operations on the west side has effectively prevented the onsite non- native grasslands from being used as refugia habitat by California tiger salamander.

It is important to note that a large band of habitat exists from Millerton Lake to the north and continuing south past the Quarry Site to Highway 41 and between the San Joaquin River on the west and Friant Road on the east. Within this isolated stretch of mostly non-native habitats that includes active agricultural, mining operations and non-native grasslands, there are no existing vernal complexes and no recorded occurrence of California tiger salamander. These data suggest that the presence of barriers created by the San Joaquin River, a perennial river, on the west and by Friant Road, a four-lane highway, on the east has disrupted migration by

California tiger salamander and consequently prevented the occupation of non-native grasslands by California tiger salamander within this large band of habitat, which includes the Quarry Site.

The open ponded areas are incidental to the mining operations and occur in completed and partially mined pits. In addition, conveyance ditches have been created to move water around the Quarry Site from the ponds to accommodate mining and the water is pumped to groundwater recharge ditches along the west side of the Quarry Site, to the northeast recharge pond and for use by water trucks for dust control. Ponded water areas are fed by surface runoff from rainfall as well as by groundwater from the surrounding alluvial soils. The year-round movement of water for mining operations prevents the pond areas from mimicking seasonal ponds needed by California tiger salamander for breeding. The perennial nature of the onsite ponds has also resulted in presence of bull frogs in all ponds. Bull frogs readily prey on California tiger salamander and other small fish and amphibian species. Due to the perennial or year-round presence of water in the onsite ponds and the known presence of bull frog, the onsite ponds do not provide suitable breeding habitat for California tiger salamander.

The lack of available (reachable) upland refugia habitat, the lack of breeding habitat, the lack of a connection between the two required habitats for California tiger salamander (due to ongoing mining operations) and the presence of bullfrogs in the ponds preclude the presence of this species on the Quarry Site. Further, historic records show that California tiger salamander does not occupy the long band of habitat south of Millerton Lake to Highway 41 that is isolated between the San Joaquin River and Friant Road, including the Quarry Site. For these reasons, California tiger salamander is presumed absent from the Quarry Site.

Burrowing Owl

Burrowing owl is designated as a California Species of Special Concern by CDFW. The burrowing owl is a grassland specialist distributed throughout western North America where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments with level to gently sloping areas characterized by open vegetation and bare ground. The western burrowing owl (*A.c. hypugaea*), which occurs throughout the western United States including California, rarely digs its own burrows and is instead dependent upon the presence of burrowing mammals (i.e., California ground squirrels [*Otospermophilus beecheyi*], coyotes, and badgers [*Taxidea taxus*]) whose burrows are often used for roosting and nesting. The presence or absence of colonial mammal burrows is often a major factor that limits the presence

or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drainpipes, stand-pipes, and dry culverts. They also require low growth or open vegetation allowing line-of-sight observation of the surrounding habitat to forage and watch for predators. In California, the burrowing owl breeding season extends from the beginning of February through the end of August.

Burrowing Owl Potential to Occur on Plant Site

The nearest recorded occurrence of burrowing owl is located approximately 2.6 miles southwest of the Plant Site located 0.6 miles east of Highway 41 (CNDDB 2003, cited in ELMT 2024a). The habitat assessment was conducted during the breeding season (March 1—August 31) and despite a systematic search of open habitat on the Plant Site, no burrowing owls or sign (i.e., pellets, feathers, castings, or whitewash) was observed. The Plant Site does not provide suitable burrows (>4 inches in diameter) adjacent to heavy machinery or other significant routine disturbances or foraging habitat for burrowing owl (*Athene cunicularia*) and the species is presumed absent.

Burrowing Owl Potential to Occur on Quarry Site

The nearest recorded occurrence of burrowing owl is located approximately 2.33 miles southwest of the Quarry Site located 0.6 miles east of Highway 41 (CNDDB 2003, cited in ELMT 2024b). The habitat assessment was conducted during the breeding season (March 1—August 31) and despite a systematic search of open habitat on the Quarry Site, no burrowing owls or sign (i.e., pellets, feathers, castings, or whitewash) was observed. The Quarry Site has been heavily disturbed by extensive mining activities over the past 30 years, leaving very little open foraging habitat that allow for line-of-sight observation favored by burrowing owl. Further, the Quarry Site does not provide small mammal burrows capable of providing suitable roosting and nesting opportunities (greater than 4 inches in diameter). Therefore, burrowing owl are presumed absent within the boundaries of the Quarry Site.

Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp is designated by the USFWS as threatened under the Federal Endangered Species Act (FESA). Vernal pool fairy shrimp are small crustaceans in the Branchinectidae family that have elongate bodies, large-stalked compound eyes, eleven (11) pairs of legs, and no carapace for protection. Adults range between 0.4—1.0 inches in length. Vernal pool fairy shrimp is currently found in twenty-eight counties in the Central Valley and Coast Ranges of California with isolated populations occurring throughout Fresno County.

Vernal pool fairy shrimp are found in rain-filled, ephemeral pools (vernal pools) that form in depressions, usually in grassland habitats. Pools must fill frequently enough and persist long enough for the species to complete its life cycle in the vernal pool. This species has a maximum longevity of 139 days with resting eggs (cysts) surviving in soil for several years. Vernal pool fairy shrimp occupy pools that often have grass or mud bottoms, clear to tea-colored water and are often in basalt flow depression pools in unplowed grasslands. Vernal pool fairy shrimp occupy a variety of vernal pool habitats, from small, clear sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. This species typically inhabits smaller pools less than 0.02 hectare in area at elevations ranging from 32 to 4,003 feet above msl. The water in the occupied pools typically has a low salinity, conductivity, alkalinity, and chloride content and a temperature ranging from 40 to 73°F. Vernal pool fairy shrimp are not found in riverine, marine or other permanent waters.

Vernal Pool Fairy Shrimp Potential to Occur on Plant Site

Northern hardpan vernal pool habitat is found east of the Plant Site, east of Friant Road (CNDDB 1998, cited in ELMT 2024a) but does not occur within the boundaries of the Plant Site. The nearest recorded occurrence of vernal pool fairy shrimp was recorded approximately 0.11 miles east of the Plant Site, east of Friant Road (CNDDB 2001, cited in ELMT 2024a). It is presumed that the soils within the Plant Site (over 99%) have been disturbed frequently enough by the 95 years of active sand and gravel mining activities such that soils needed for vernal pool habitat has been eliminated or severely impacted. No vernal pools occur within the boundaries of the Plant Site. It is important to note the large band of land between the San Joaquin River on the west and Friant Road on the east between Millerton Lake on the north and Highway 41 on the south, is an isolated stretch of mostly non-native habitat that supports active agricultural and mining operations. There are no existing vernal complexes within this band and no recorded occurrences of vernal pool fairy shrimp, including on the Quarry Site. Vernal pool fairy shrimp are presumed absent from the Quarry Site.

Therefore, vernal pool fairy shrimp are presumed absent from the Plant Site.

Vernal Pool Fairy Shrimp Potential to Occur on Quarry Site

Northern hardpan vernal pool habitat is found east of the Quarry Site, across Friant Road (CNDDB 1998) but does not occur within the boundaries of the Quarry Site. The nearest recorded occurrence of vernal pool fairy shrimp was recorded approximately 0.11 miles east of the Quarry Site, east of Friant Road (CNDDB 2001).

An ephemeral swale is located within the southeast portion of the Quarry Site along Friant Road. No water was observed in this ephemeral swale during the habitat assessment, despite heavy rains. It is presumed that runoff from Friant Road temporarily fills the pool during the rainy season but the soils within the Quarry Site have been disturbed frequently enough by the over 30 years of active sand and gravel mining activities that soils needed for vernal pool habitat has been eliminated or severely impacted. No vernal pools occur within the boundaries of the Quarry Site. Vernal pool fairy shrimp are presumed absent from the Quarry Site.

It is important to note the large band of land between the San Joaquin River on the west and Friant Road on the east between Millerton Lake on the north and Highway 41 on the south, is an isolated stretch of mostly non-native habitat that supports active agricultural and mining operations. There are no existing vernal complexes within this band and no recorded occurrences of vernal pool fairy shrimp, including on the Quarry Site. Vernal pool fairy shrimp are presumed absent from the Quarry Site.

Western Pond Turtle

Western pond turtle is listed as a California Species of Concern and is the only species in its genus that occurs in the western United States. Currently, western pond turtle occurs in 90% of its historic range in the Central Valley and west of the Sierra Nevada, but in greatly reduced numbers. Western pond turtle is a small turtle with a relatively low, oval shaped carapace that can be up to 8.3 inches in length. Its shell may exhibit an olive brown, dark brown, or grayish color that may contain a pattern of dark spots or lines that radiate from the centers of the scutes, or it may have no pattern. Its skin is gray with some pale yellow on the neck, chin, forelimbs, and tail.

They occur in a variety of aquatic habitats from sea level to 6,500 feet above msl. Typical habitat types for this species include rivers, streams, lakes, ponds, wetlands, reservoirs, and brackish estuarine waters. Habitats with large areas for cover (logs, algae, vegetation etc.) and basking sites are preferred. Optimal habitat for this species is characterized by the presence of adequate emergent basking sites, emergent vegetation, and the presence of suitable refugia (undercut banks, submerged vegetation, mud, rocks, and logs). Western pond turtles overwinter in both aquatic and terrestrial habitats. Terrestrial overwintering habitat consists of burrows in leaf litter or soil. Most of their diet consists of algae, various plants, crustaceans, midges, dragonflies, beetles, stoneflies, and caddisflies.

Western Pond Turtle Potential to Occur on Plant Site

The nearest recorded occurrence of western pond turtle was recorded approximately 2.75 miles southeast of the Plant Site within pools adjacent to the Friant—Kern Canal (CNDDB 2004). Western pond turtle was not observed on-site during the 2019 habitat assessments. Even though the Plant Site has silt ponds that accumulate/retain rainwater and process water from mining operations, the level of disturbance throughout the Plant Site (over 99%) severely limits movement opportunities for western pond turtle to access the silt ponds. Therefore, it was determined that western pond turtle has a low potential of occurring within the boundaries of the Plant Site.

Western Pond Turtle Potential to Occur on Quarry Site

The nearest recorded occurrence of western pond turtle was recorded approximately 3.25 miles southeast of the Quarry Site within pools adjacent to the Friant—Kern Canal (CNDDB 2004). Western pond turtle was not observed on-site during the 2019 habitat assessments. Even though the Quarry Site has ponded pits that accumulate/retain rainwater and process water from mining operations, the level of disturbance throughout the Quarry Site severely limits movement opportunities for western pond turtle to access the ponded pits. Therefore, it was determined that western pond turtle has a low potential of occurring within the boundaries of the Quarry Site.

Western Spadefoot Toad

Western spadefoot is listed as a California Species of Concern that is a member of the family Pelobatidae. It has been recorded from the vicinity of Redding in Shasta County, California, southward into Baja California, Mexico and is mostly found below 3,000 feet msl. Spadefoot toads in general are distinguished from the true toads (genus Bufo) by their vertically elliptical pupils in bright light and the single black sharp-edged "spade" on each hind foot which is used for digging, teeth in the upper jaw, and smooth skin. Western spadefoot toad ranges from 3.7 to 6.2 cm in size with a whitish abdomen without any markings. Other characteristics of western spadefoot toads include a usually pale gold iris and dusky green or gray above and often four irregular light-colored stripes on its back.

Western spadefoot toads are almost entirely terrestrial and enter water only to breed. They are primarily a species of lowland habitats including washes, floodplains of rivers, alluvial fans, playas, and alkali flats. Western spadefoot toads prefer areas of open vegetation and short grasses where the soil is friable. Spadefoot toads require upland habitats for feeding and for constructing burrows for the long dry season dormancy. During dry periods, they construct and occupy burrows that may be up to

three feet in depth and could remain in these burrows for eight to nine months. The western spadefoot also requires seasonal wetlands for reproduction and metamorphosis. Western spadefoot toad eggs and larvae have been observed in a variety of permanent and temporary wetlands including rivers, creeks, pools in intermittent streams, vernal pools, and temporary rain pools.

Western Spadefoot Potential to Occur on Plant Site

The nearest recorded occurrence of western spadefoot was recorded approximately 1.80 miles northwest of the Plant Site along the Madera Canal (CNDDB 2008). Western spadefoot was not observed on-site during the 2019 habitat assessment. Even though the Plant Site has silt ponds that accumulate /retain rainwater and process water from mining operations, the level of disturbance throughout the Plant Site (over 99%) severely limits movement opportunities for western spadefoot to access the silt ponds. Therefore, it was determined that western spadefoot has a low potential of occurring within the boundaries of the Plant Site.

Western Spadefoot Potential to Occur on Quarry Site

The nearest recorded occurrence of western spadefoot was recorded approximately 1.20 miles northwest of the Quarry Site along the Madera Canal (CNDDB 2008). Western spadefoot was not observed on-site during the 2019 habitat assessment. Even though the quarry has ponded pits that accumulate /retain rainwater and groundwater, the level of disturbance throughout the Quarry Site severely limits movement opportunities for western spadefoot to access the ponded pits. Therefore, it was determined that western spadefoot has a low potential of occurring within the boundaries of the Quarry Site.

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle is found in riparian habitat but only in areas that also support its host plant, elderberry (*Sambucus* sp.). The project sites do not support riparian habitat and there are no elderberry on the sites. Adjacent riparian habitats associated with the San Joaquin River occur to the west of the project sites as well as with Little Dry Creek north of the Plant Site. These riparian habitats provide suitable habitat for this species. Approximately 122 elderberries were recorded within 500 feet of the Plant Site during the potential groundwater dependent vegetation survey conducted in January 2024. However, these two riparian areas are outside the boundaries of the project sites.

Tricolored Blackbird

Habitat requirements for tri-color blackbird include accessible water, protected nesting substrate (freshwater marsh dominated by cattails, willows and bulrushes) and open foraging area with abundant insect prey. Riparian habitats associated with the San Joaquin River and Little Dry Creek provide these resources but occur west and/or north of the project sites. The habitat features do not occur within the boundaries of the project sites. According to the CNDDB, there are no known occurrences within the immediate vicinity of the project sites.

Raptor Species

There is a moderate potential that raptor species including bald eagle, Swainson's hawk, white-tailed kite, Cooper's hawk, northern harrier, and osprey, will forage over the project sites. Nesting habitat occurs west of the project sites in riparian and oak woodland habitats associated with the San Joaquin River as well as north of the Plant Site associated with Little Dry Creek. Neither of these preferred nesting habitats occur within the project sites. A single osprey nest was observed in the oak woodland west of the project sites.

4.4.1.9 Critical Habitat

Under FESA, 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. Maintenance of these physical and biological features requires special management considerations or protection, regardless of whether the species is present or not.

Neither the Plant Site nor Quarry Site is located within designated Critical Habitat. Federally designated Critical Habitat for California tiger salamander, succulent owl's clover (*Castilleja campestris* ssp. *succulenta*), and San Joaquin Valley orcutt grass (*Orcuttia inaequalis*) are located across the San Joaquin River from the Plant Site and Quarry Site, and Critical Habitat for California tiger salamander is located approximately 2.0 miles northeast of the eastern boundary of the project sites. In addition, the historic severe and ongoing levels of disturbance of native habitats by agriculture and mining of the band of land isolated between Millerton Lake on the north and Highway 41 on the south and between the San Joaquin River on the west and Friant Road on the east, including the Plant Site and Quarry Site, have precluded the presence of suitable habitats to support any of these three species. Further, all of the above mentioned designated Critical Habitats are located west of the San Joaquin River or east of Friant Road. Critical Habitat has not been designated within this isolated band of habitat between the San Joaquin River and Friant Road.

4.4.1.10 Habitat Conservation Plans and Natural Community Conservation Plans

Neither the Quarry Site nor the Plant Site occur within a Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP) area. The nearest adopted HCP/NCCP area is in Bakersfield, California, approximately 100 miles south of City of Fresno.

4.4.2 Regulatory Setting

4.4.2.1 Federal

Federal Endangered Species Act

FESA (16 USC 1531-1544) provides protection for federally listed endangered and threatened species and their habitats. An "endangered" species is a species in danger of extinction throughout all or a significant portion of its range. A "threatened" species is a species that is likely to become endangered in the foreseeable future throughout all or a significant portion of its range. Other special-status species include proposed species and species of concern. Proposed species are those that have been officially proposed (in the *Federal Register*) for listing as threatened or endangered. Species of concern are species for which not enough scientific information has been gathered to support a listing proposal, but still may be appropriate for listing in the future after further study. A delisted species is one whose population has reached its recovery goal and is no longer in jeopardy. The USFWS administers the FESA. A project may obtain permission to take federally listed species in one of two ways: (1) a Section 10 the HCP issued to a private party; or (2) a Section 7 Biological Opinion (BO) from the USFWS or the National Oceanic and Atmospheric Administration (NOAA) issued to another federal agency that funds or permits an action (such as the Army Corps issuance of a permit under CWA Section 404). Under either section of the FESA, adverse impacts to federally listed species must be avoided, minimized, or mitigated to the satisfaction of the USFWS and/or NOAA.

Migratory Bird Treaty Act

Raptors (birds of prey), passerine birds, and other migratory avian species are protected by a number of state and federal laws. The Migratory Bird Treaty Act (16 USC 703-712) establishes special protection for migratory birds by regulating hunting or trade in migratory birds. Furthermore, this Act prohibits anyone to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Section 10.13, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Part 21). The definition of "take" includes any disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young), and such activity is potentially punishable by fines and/or imprisonment.

4.4.2.2 State

California Endangered Species Act

Similar to the FESA, the CESA (California Fish and Game Code (CFGC) Sections 2050–2089.25), along with the Native Plant Protection Act (CFGC Sections 1900–1913), authorizes the California Fish and Game Commission to designate, protect, and regulate the taking of special-status species in California. CESA defines "endangered" as those species which are "in serious danger of becoming extinct throughout all, or a significant portion, of its range...." (CFGC Section 2062). Species State-listed as threatened are those not presently threatened with extinction, but which are "likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts...." (CFGC Section 2067).

Section 2080 of the CFGC prohibits the taking of State-listed plants and animals. CDFW can issue incidental take permits (ITPs) under Section 2081 of CESA. The County's approval of the project does not eliminate the applicant's obligation to comply with CFGC Section 2080.

CDFW Species of Concern

In addition to species formally listed under the FESA and CESA, species of special concern receive consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of species of special concern, developed by CDFW. It tracks species in California whose breeding populations in California may be decreasing or face local extirpation. To avoid the future need to list these species as endangered or threatened, CDFW recommends consideration of these species, which do not as yet have any legal status, during analysis of the impacts of projects.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) [Sections 13000 et seq.]) was enacted to establish a regulatory program to protect water quality and beneficial uses of all waters of the State of California. It created the State Water Resources Control Board (SWRCB) and nine regional water quality control boards (RWQCBs) to plan, implement, manage, and enforce water quality protection and management. The RWQCBs are empowered by the Porter-Cologne Water Quality Control Act to require compliance with state and local water quality standards. The project site are located within Central Valley RWQCB jurisdiction.

The National Pollutant Discharge Elimination System (NPDES) permitting program is administered in California by the SWRCB. To obtain a NPDES permit under the General

Permit for stormwater, applicants must prepare and submit a notice of intent to the SWRCB and develop a stormwater pollution prevention plan (SWPPP) and monitoring program that incorporates applicable best management practices (BMPs).

In addition to implementing the NPDES permitting program, the Porter-Cologne Act authorizes the RWQCBs to issue Waste Discharge Requirements (WDRs). Generally, WDRs are issued for discharges that are exempt from the CWA NPDES permitting program, discharges that may affect groundwater quality, and/or wastes that may be discharged in a diffused manner. WDRs are established and implemented to achieve the water quality objectives for receiving waters as established in the Basin Plans. The WDR process begins when an applicant submits a Report of Waste Discharge to the local RWQCB. The RWQCB staff can then issue WDRs and monitoring requirements. WDRs require preparation and implementation of a site-specific SWPPP. A SWPPP identifies all potential pollutants and their sources and includes a list of BMPs to reduce the discharge of potential stormwater pollutants.

401 Water Quality Certification and Wetlands Program

The 401 Water Quality Certification and Wetlands Program is responsible for regulating discharge of dredged or fill material to waters of the State. The SWRCB and the RWQCBs have the authority to regulate these discharges under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne), described above.

CEQA Guidelines

CEQA Guidelines Section 15065 requires a mandatory finding of significance for projects that have the potential to substantially degrade or reduce the habitat of a fish or wildlife species, and to fully disclose and mitigate, if feasible, impacts to special-status resources. Although threatened and endangered species are protected by specific federal and state statutes, described above, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria for the region or locality.

4.4.2.3 Local

Fresno County Ordinance Code

There are no regulations in the Fresno County Ordinance code pertaining to biological resources that apply to the proposed project.

Zoning Ordinance of Fresno County–Land Use and Planning

The Zoning Ordinance of Fresno County—Land Use and Planning, last amended June 2018, has policies and ordinances related to biological resources. Specifically, Section 858, "Regulations for Surface Mining and Reclamation in All Districts," contains the following countywide development standards:

Section 858–Regulations for Surface Mining and Reclamation in All Districts

H. Mining and Reclamation Standards

11. The species selected for revegetation shall be those with good survival characteristics for the topography, resoiling characteristics, and climate of the mined area. The operator shall provide a schedule and methodology for monitoring vegetation and replacing vegetation should the Department determine that replacement is necessary.

25. The Department shall consider the potentially adverse environmental effects of surface mining operations and will generally require that:

    a) Disturbances of vegetation and overburden in advance of mining activities be minimized.

    c) All reasonable and practical measures be taken to protect the habitat of fish and wildlife.

26. Reclamation of mined lands shall be implemented in conformance with applicable performance standards as set forth in the State Regulations Sections 3703 et seq. pertaining to the subjects listed below:

    a) Wildlife habitat.

    g) Stream protection including surface and groundwater.

Surface mining operators are required to forward an annual surface mining report to the Department of Conservation (DOC) and to the County Department of Public Works and Development Services. The County is required to conduct or cause an inspection of the surface mining operation within six months of receipt of the operator's annual report to determine whether the surface mining operation is in compliance with the approved conditional use permit, approved mining and reclamation plan, approved financial assurances, and state regulations pertaining to mining. The County must submit the completed inspection form to the DOC within 30 days along with statements on compliance with SMARA, any inconsistencies with SMARA, and any pending action on the mine and reclamation plan, amendments, or financial assurances.

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) Open Space and Conservation Element includes policies related to conservation of biological resources. Fresno County General Plan policies that apply to the proposed project are listed below.

Open Space and Conservation Element

Section D. Wetland and Riparian Areas

Goal OS-D: To conserve the function and values of wetland communities and related riparian areas throughout Fresno County while allowing compatible uses where appropriate. Protection of these resource functions will positively affect aesthetics, water quality, floodplain management, ecological function, and recreation/tourism.

Policy OS-D.4: The County shall require riparian protection zones around natural watercourses and shall recognize that these areas provide highly valuable wildlife habitat. Riparian protection zones shall include the bed and bank of both low- and high-flow channels and associated riparian vegetation, the band of riparian vegetation outside the high-flow channel, and buffers of 100 feet in width as measured from the top of the bank of unvegetated channels and 50 feet in width as measured from the outer edge of the dripline of riparian vegetation.

Policy OS-D.5: The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas.

Policy OS-D.7: The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient storage, and wildlife habitats.

Section E. Fish and Wildlife Habitat

Goal OS-E: To help protect, restore, and enhance habitats in Fresno County that support fish and wildlife species so that populations are maintained at viable levels.

Policy OS-E.1: The County shall support efforts to avoid the "net" loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient

ratios to replace the function, and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the U.S. Fish and Wildlife Service and the California Department of Fish and Game to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.

Policy OS-E.2: The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both onsite habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife.

Policy OS-E.3: The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the value of the habitat for wildlife is maintained.

Policy OS-E.4: The County shall encourage private landowners to adopt sound wildlife habitat management practices, as recommended by the California Department of Fish and Wildlife officials and the U.S. Fish and Wildlife Service.

Policy OS-E.7: The County shall continue to closely monitor pesticide use in areas adjacent to habitats of special-status plants and animals.

Policy OS-E.9: Prior to approval of discretionary development permits, the County shall require, as part of any required environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special-status plants or animals. Such evaluation will

consider the potential for significant impact on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-E.11: The County shall protect significant aquatic habitats against excessive water withdrawals that could endanger special-status fish and wildlife or would interrupt normal migratory patterns.

Policy OS-E.12: The County shall ensure the protection of fish and wildlife habitats from environmentally-degrading effluents originating from mining and construction activities that are adjacent to aquatic habitats.

Policy OS-E.13: The County should protect to the maximum extent practicable wetlands, riparian habitat, and meadows since they are recognized as essential habitats for birds and wildlife.

Policy OS-E.14: The County shall require a minimum 200-foot-wide wildlife corridor along particular stretches of the San Joaquin River and Kings River, whenever possible. The exact locations for the corridors should be determined based on the results of biological evaluations of these watercourses. Exceptions may be necessary where the minimum width is infeasible due to topography or other physical constraints. In these instances, an offsetting expansion on the opposite side of the river should be considered.

Policy OS-E.16: The County should preserve in a natural state to the maximum possible extent areas that have usually high value for fish and wildlife propagation.

Policy OS-E.17: The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with state and federal endangered species laws.

Policy OS-E.18: The County should preserve areas identified as habitats for rare or endangered plant and animal species primarily through the use of open space easements and appropriate zoning that restrict development in these sensitive areas.

Policy OS-E.19: For development projects on sites where tree or vegetation/habitat removal is necessary and where the existence of sensitive species and/or bird species protected by California Fish and Wildlife Code Sections 3503 and 3503.5 and Migratory Bird Treaty Act has been determined by a qualified biologist, surveys for nesting birds shall be conducted within 14 days prior to project activities by a qualified biologist

retained by the developer for all construction sites where activities occurring during nesting bird season (February 1 through September 15). The surveys shall include the entire disturbance area plus at least a 500-foot buffer around the project site.

If active nests are located, all construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 250 feet for non-raptor bird species and at least 500 feet for raptor species, unless determined otherwise by the qualified biologist. Buffer distances for bird nests shall be site-specific and an appropriate distance, as determined by a qualified biologist. The buffer distances shall be specified to protect the bird's normal behavior thereby preventing nesting failure or abandonment. The buffer distance recommendation shall be developed after field investigations that evaluate the bird(s) apparent distress in the presence of people or equipment at various distances. Abnormal nesting behaviors which may cause reproductive harm include, but are not limited to, defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, and flying away from the nest. The qualified biologist shall have authority to order the cessation of all nearby project activities if the nesting birds exhibit abnormal behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young) until an appropriate buffer is established.

Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed, and young have fledged the nest prior to removal of the buffer. The biologist shall submit a report of these preconstruction nesting bird surveys to the County to document compliance within 30 days of its completion.

Section F. Vegetation

Goal OS-F: To preserve and protect the valuable vegetation resources of Fresno County.

Policy OS-F.1: The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides and ridges, and along important

transportation corridors, consistent with fire hazard and property line clearing requirements.

Policy OS-F.2: The County shall require developers to use native and compatible non-native plant species, especially drought-resistant species, to the extent possible, in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for project mitigation.

Policy OS-F.3: The County shall support the preservation of significant areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

Policy OS-F.5: The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-F.8: The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches and on unused or marginal land for the benefit of wildlife.

Policy OS-F.10: The County shall require that new developments preserve natural woodlands to the maximum extent possible.

Policy OS-F.11: The County shall promote the preservation and management of oak woodlands by encouraging landowners to follow the Fresno County Oak Management Guidelines, to prepare an Oak Management Plan for their property.

4.4.3 Significance Criteria and Analysis Methodology

4.4.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to biological resources if it would:

a) have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG (now CDFW) or USFWS;
b) have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG (now CDFW) or USFWS;
c) have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
d) interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
e) conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and
f) conflict with the provisions of any adopted habitat conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The project sites are not located within the boundaries of any approved or draft HCP, NCCP, or other adopted local, regional or state HCP. Therefore, topic (f) is not applicable to the proposed project and not discussed further in this Draft EIR.

4.4.3.2 Analysis Methodology

The evaluation of potential impacts to biological resources is based on the resources present, or likely to be present, on the project sites and the known disturbance and other activities associated with the proposed project that could potentially alter habitat, reduce the quality of habitat, or otherwise have an adverse effect on biological resources. Due to the intended approximate 100-year life span of the proposed mining and reclamation activities and the alteration to the existing landscape that would occur as a result of the project, physical disturbance, and activities associated with project activities are considered permanent in terms of determining the significance of project impacts.

When impacts are deemed significant, mitigation measures are identified to avoid or minimize the impact. Some of the mitigation measures are based on specific agency guidelines and performance standards, and they may also be conditions of permits or other approvals that are ultimately required for the project. The proposed project would be required to comply with a number of environmental laws and regulations including those administered by USACE, USFWS, CDFW, and the Central Valley RWQCB, as described above in Section 4.4.2, "Regulatory Setting." Approvals issued by these agencies may include measures to offset potential impacts associated with the proposed project consistent with or in addition to those identified herein.

4.4.4 Project Impacts and Mitigation Measures

Impact 4.4-1: Have an Adverse Effect, Directly or Indirectly, on Special-Status Plant or Wildlife Species on the Plant Site or Quarry Site During Mining Operations

The Plant Site has been subjected to a heavy regime of disturbances from active mining operations (over 99% of the Plant Site is disturbed) for 95 years. Similarly, the Quarry Site has been subjected to a heavy regime of disturbances (over 90% of the Quarry Site is disturbed) from mining activities from 1913-1920's, from farming activities since the 1930's and from active mining operations for over the past 30 years. This sustained level of continuous disturbances has eliminated the naturally occurring plant communities that once occupied the project sites. Therefore, none of the special-status plant species identified in the literature search are expected to occur and all are presumed to be absent from the Plant Site and Quarry Site.

As described in the "Special-Status Wildlife Species" subsection, California tiger salamander, burrowing owls, and vernal pool fairy shrimp are presumed absent from both project sites due to a lack of suitable habitat. However, burrowing owls do occur within grasslands in this region, and although very unlikely, it is possible that borrowing owls could enter the non-native grasslands present on the Quarry Site (see Figure 4.4-2), and the disturbance of these grassland areas for mining could result in adverse effects to burrowing owls. Out of an abundance of caution, Mitigation Measure 4.4-1a requires the implementation of pre-construction surveys for burrowing owls prior to the disturbance of the grasslands that are established on the Quarry Site. With implementation of Mitigation Measure 4.4-1a, any borrowing owls found to occupy the Quarry Site grasslands would be relocated in accordance with a relocation plan approved by CDFW. Therefore, the potential of the proposed project to result in adverse impacts to burrowing owls that enter the Quarry Site grasslands would be less than significant with mitigation.

The project sites have a low potential to provide suitable habitat for western pond turtle and western spadefoot. However, the removal of silt ponds to allow for the mining of aggregate and/or hardrock underneath would adversely affect western pond turtle and western spadefoot, if any are present in the ponds during removal. Mitigation Measure 4.4-1b would require pre-construction clearance surveys of the ponds on the Plant Site and Quarry Site to be conducted no more than 14 days prior to the removal of a pond. A pond cannot be left elevated above the surrounding excavation, as a result avoidance of occupied habitat is not feasible. Therefore, any member of the species present would be captured by a qualified biologist and with approval from CDFW relocated to similar habitat near the project sites. With implementation of Mitigation Measure 4.4-1b, the potential of the proposed project to result in adverse impacts to any western pond turtle and western spadefoot present at the Plant Site and Quarry Site ponds would be less than significant.

Raptor species such as Swainson's hawk (*Buteo swainsoni*), bald eagle (*Haliaeetus leucocephalus*), and osprey (*Pandion haliaetus*) have a moderate potential to forage over both the Plant Site and Quarry Site. Abundant nesting habitat for raptor species can be found offsite along the San Joaquin River west of the project sites and in the area along Little Dry Creek north of the Plant Site. The absence of native habitats on the project sites, combined with the continuing level of disturbances from ongoing mining and processing operations precludes the use of the project sites for nesting by raptor species. Several non-raptor avian species are present on the project sites, some of which may nest onsite if conditions are favorable. Ground disturbance and noise impacts from mining could disturb nesting birds located on or near the project sites. Therefore, Mitigation Measure 4.4-1c requires the implementation of pre-construction surveys for nesting birds, including raptors, prior to the initiation of a mining phase as shown on the Plant Site Mining Plan (see Figure 2-7, "Proposed Plant Site Mining Plan," of Chapter 2, "Project Description," of this Draft EIR) and Quarry Site Mining Plan (Figure 2-8, "Proposed Quarry Site Mining Plan"). The survey must include a 500-foot buffer around the area to be disturbed. If an active nest is observed during the survey, construction activities are prohibited within a 300-foot buffer of any nest observed during the survey, and within a 500-foot buffer for listed and raptor species, until a time when the birds have left the nest, or the nest becomes inactive under natural conditions. With implementation of Mitigation Measure 4.4-1c, the potential for the proposed project to result in adverse impacts to nesting birds at or near the Plant Site and Quarry Site would be less than significant.

All remaining special-status wildlife species have a low potential to occur on the Plant Site and Quarry Site or are presumed to be absent based on habitat requirements, availability/quality of habitat needed by each species, and known distributions.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures:

Mitigation Measure 4.4-1a: *Burrowing Owl*

A pre-construction clearance survey for burrowing owl shall be conducted on the Quarry Site prior to disturbing any grasslands in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (dated March 7, 2012). The first survey shall be conducted at least 14 days prior to the initiation of construction of the aggregate plant and/or of each mining phase and the second survey shall be conducted within 24 hours of the start of construction of the aggregate plant and/or of each mining phase to ensure burrowing owl remain absent from the Quarry Site. If burrowing owls are found to occupy the Quarry Site grasslands at the time of the clearance survey, a relocation plan shall be developed, approved by CDFW, and implemented prior to development of any Quarry Site grasslands.

Mitigation Measure 4.4-1b: *Western Pond Turtle and Western Spadefoot*

Pre-construction clearance surveys within the boundaries of the Quarry Site shall be conducted no more than 14 days prior to removal of a temporary pond to be removed so that the aggregate or hardrock below the pond can be mined. A combination of visual and trapping surveys by a CDFW qualified biologist may be performed. A pond cannot be left elevated above the surrounding excavation, as a result avoidance of occupied habitat is not feasible. Therefore, if the species is determined to be present in work areas, the biologist with approval from CDFW may capture turtles and spadefoot prior to construction activities and relocate them to nearby, suitable habitat near the Quarry Site. Exclusion fencing should then be installed, if feasible, to prevent turtles and spadefoot from reentering the work area. For the duration of work to remove the temporary pond, the biologist shall conduct at least weekly follow-up visits to monitor effectiveness and take appropriate corrective action if protection measures are not adequate.

Mitigation Measure 4.4-1c: *Nesting Birds*

If the initiation of construction at the Plant Site or the initiation of a mining phase as shown on the Plant Site Mining Plan (Figure 2-7) will occur between February 1 and August 31, a pre-construction clearance survey for nesting birds, including the above noted raptor species (Swainson's hawk, bald eagle, red-tailed hawk and white-tailed kite) and the tricolored blackbird (Agelaius tricolor) should be conducted by a qualified biologist within three (3) days of the start of any vegetation removal or ground disturbing activities within the immediate area of the mining phase where construction is to be initiated and as well as within a 50-foot buffer of such areas to ensure that no nesting birds will be disturbed during construction. As shown on Exhibit 5 in Appendix E-1,

"Plant Site Habitat Assessment" there are no trees suitable for nesting at the Plant Site for the above noted raptor species (Swainson's hawk, bald eagle, red-tailed hawk and white-tailed kite) except along Friant Road and outside the perimeter of the survey area. Therefore, the survey for the raptor species shall be limited to the initiation of construction along Friant Road and outside the perimeter of the survey area.

If the initiation of construction at the new plant at the Quarry Site or the initiation of a mining phase as shown on the Quarry Site Mining Plan (Figure 2-8) will occur between February 1 and August 31, a pre-construction clearance survey for nesting birds, including the above noted raptor species (Swainson's hawk, bald eagle, red-tailed hawk and white-tailed kite) and the tricolored blackbird (Agelaius tricolor) should be conducted by a qualified biologist within three (3) days of the start of any vegetation removal or ground disturbing activities within the immediate area of the mining phase as shown on the Quarry Site Mining Plan (Figure 2-8) where construction is to be initiated and as well as within a 50-foot buffer of such areas to ensure that no nesting birds will be disturbed during construction.

As shown on Exhibit 5 in Appendix E-2, "Quarry Site Habitat Assessment," there are no trees suitable for nesting for the above noted raptor species except along the west side of the project next to the river. Therefore, the survey for the raptor species shall be limited to the initiation of construction along the west side of the project next to the river. The biologist who conducted the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities shall stay outside of a 300-foot buffer around the active nest. For listed and raptor species, this buffer shall be expanded to 500 feet. A biological monitor shall be present to delineate the boundaries of the buffer area and monitor the active nest to ensure that nesting behavior is not adversely affected by construction activities. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, construction activities within the buffer area can occur.

Criteria related to the amount and duration of nest monitoring that will be required if an active avian nest is found are as follows:

- *If an active nest is found and construction will remain outside of a 300/500-foot buffer from the nest, the Biologist shall watch the nest for at least 15 minutes during construction to determine if the nesting birds are disturbed by construction activities. If the birds appear distressed or behave aggressively toward the construction, a greater avoidance buffer shall be implemented and watched by the Biologist again. Once a suitable buffer has been determined to be effective, the*

Biologist may decide whether ongoing nest monitoring is warranted.

- *If an active nest is found and construction will occur within 300/500 feet of the active nest for multiple weeks, the nest shall be checked at least on a weekly basis to determine if its status has changed. The Biologist shall check the nest a week after construction has left the area in order to document that the nesting activity continues to proceed successfully.*
- *If the nest of a listed or fully protected species is found within a survey buffer, the CDFW will be notified within 24 hours for coordination of any additional monitoring requirements.*

Level of Significance After Mitigation: Less than significant.

Impact 4.4-2: Have an Adverse Effect, Directly or Indirectly, on Special-Status Wildlife Species in Riparian Habitat Surrounding the Plant Site and Quarry Site During Mining Operations

Mining activities on the Plant Site and Quarry Site could result in potential adverse impacts to special-status species in the riparian habitat surrounding the project sites if light, noise and vibration, and the operation of heavy equipment during mining activities result in substantial disturbance. This analysis focuses on the potential impacts to terrestrial species in off-site riparian areas and the potential impacts of blasting vibration on fish in the San Joaquin River as discussed in Impact 4.4-6. The Plant Site and Quarry Site habitat assessments indicate that wildlife is often observed to habituate well to daily recurring activities and noise associated with the operations including haul trucks, excavators, scrapers, front-loaders, dozers, rock being loaded on trucks, rock crushing, night lighting, etc. Examples of such wildlife habituation include osprey successfully nesting annually on power poles immediately adjacent to rock plants and right along truck haul routes; mule deer (*Odocoileus hemionus*) successfully raising young next to and foraging within mining operations; heavily traveled mule deer trails under overhead conveyors and through active mining operations; bald eagles successfully nesting annually next to and above heavily travelled truck access roads and next to crushing operations and foraging within the mining operations; barn owls (*Tyto alba*) and great horned owls (*Bubo virginianus*) roosting and nesting annually on rock plants; raptors such as red-tailed hawks, red-shouldered hawks (*Buteo lineatus*), and Swainson's and Cooper's hawks (*Buteo swainsonii* and *Accipiter cooperii*) nesting successfully next to and foraging within mining operations; bobcats (*Linx rufus*) and mountain lion (*Felis concolor*) raising young and hunting in and around mining operations; resident and migratory birds successfully nesting annually adjacent to and in the middle of active mining operations (e.g. Clark's grebe [*Aechmorphorus clarkia*], Canada geese [*Branta canadensis*], great egret [*Ardea alba*], great blue heron *[Ardea Herodias]*, night heron *[Nycticorax nycticorax]*, red-

wing blackbirds *[Agelaius phoeniceus]*, tricolored blackbirds [*Agelaius tricolor*], yellow-headed blackbird [*Xanthocephalus xanthocephalus*], tree swallow [*Tachycineta bicolor]*, cliff swallow [*Petrochelidon pyrrhonota*], house wren [*Troglodytes aedon*], ash-throated flycatcher [*Myiarchus cinerascens*], etc.).

Another example of wildlife successfully habituating to land uses that generate substantial noise and vibration is the Cajon Creek Conservation Bank. The Cajon Creek Conservation Bank is a 1,360-acre federally and state approved bank that supports two federally listed species and 42 special status species in southern California, including several raptor species and other avian species. The 1,360 acres of bank are collocated with active surface mining operations. Vulcan Materials has successfully managed this bank for over 20 years while continuing its mining operations in the collocated areas.

The Plant Site and Quarry Site have been in operation for decades, and areas surrounding the project sites are historically and currently mined and used for agriculture. The proposed project would involve mining within the footprint of existing operations of the Plant Site and Quarry Site. Therefore, based on observations of other locations where species have become habituated to land use activities that generate substantial noise and vibration, and based on the historic and current use of the Plant Site and Quarry Site for mining operations, the potential for the proposed continuation of mining and processing at the project sites to result in a substantial adverse effect on special-status wildlife species that occur in the riparian habitat along the San Joaquin River and Little Dry Creek would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.4-3: Have an Adverse Effect, Directly or Indirectly, on Special-Status Plant or Wildlife Species on the Plant Site or Quarry Site After the Completion of Mining and Reclamation

Upon completion of mining and reclamation, all activities would cease, and all equipment would be removed. There would be no sources of lighting, noise, or vibration on the project sites and no operation of equipment with the exception of periodic vehicles and equipment that would enter the site for activities associated with vegetation management. Dewatering of the quarry pits on both sites would cease and the quarry pits would begin to fill with water. At the Plant Site, an approximately 100.5-acre, 20-foot-deep pond would be formed in the quarry pit from groundwater and rainfall. At the Quarry Site, an approximately 108-acre, 100-foot-deep lake would be created from groundwater and rainfall in the excavation bottom. The surface elevation of the Quarry

Site pit lake would be approximately 500 feet below the surrounding grade. The final reclaimed uses on the project sites would be open space, and riparian and open water wildlife habitat. The proposed reclaimed conditions are shown on Figure 2-9, "Plant Site Final Reclaimed Conditions," and Figure 2-10, "Quarry Site Final Reclaimed Conditions," of Chapter 2 of this Draft EIR.

The proposed land uses after reclamation would not have the potential to adversely impact special-status plant or wildlife species, either directly or indirectly, with the exception of the quarry pit pond that would form at the Plant Site and the quarry pit lake that would form at the Quarry Site. As described in detail under Impact 4.10-4, in Section 4.10, "Hydrology and Water Quality," of this Draft EIR, elevated concentrations of minerals and metals can occur in and around reclaimed mining excavations that have filled with water. Adverse effects to special-status species could occur if wildlife that encounter the quarry pit pond or the quarry pit lake are exposed to water with elevated concentrations of metals or minerals. The Hydrology and Water Quality Analysis Report (Appendix G-5) estimated the potential of water quality in the quarry pit pond and quarry pit lake to exceed water quality standards based on the primary and secondary maximum contaminant levels (MCLs) for drinking water identified by the SWRCB (SWRCB 2018a and 2018b). Primary MCLs limit the levels of contaminants in drinking water that could be harmful to public health, while secondary MCLs regulate contaminants in drinking water that may cause cosmetic effects (such as tooth discoloration) or aesthetic effects (such as taste, odor, or color For special-status plant and wildlife species, the appropriate standards are not drinking water MCLs, but the U.S. EPA ecotoxicity thresholds (https://www.epa.gov/sites/default/files/2015-11/documents/v3no2.pdf) because they were developed to specifically consider effects on ecological receptors, as opposed to human health. The Hydrology and Water Quality Analysis Report concluded that, since the amount of rainfall inflow (consisting of direct rainfall, runoff, and groundwater inflow) into the reclaimed Quarry Site pit lake would exceed the amount of evaporation from the lake, the evaporation would not increase the concentrations of minerals, metals, and other dissolved solids in the water in the reclaimed Quarry lake over time. There is a potential for the buildup of iron and manganese to occur in the Plant Site reclaimed pond and exceed the secondary MCL for iron and the secondary MCL for manganese and the secondary MCL for manganese; however, the U.S. EPA ecotoxicity thresholds for iron and manganese are 330 percent and 160 percent higher than the respective secondary MCLs. Other constituents, such as selenium, have not been detected in surface water bodies at the Plant Site and Quarry Site, and reported groundwater concentrations are only 10 percent to 20 percent of the selenium ecotoxicity threshold. As a result, there is no indication of potential adverse impacts to the health of wildlife. Consequently, because the concentrations of

constituents of concern would not exceed the ecotoxicity thresholds, the potential for the water quality in the reclaimed quarry pit pond on the Quarry Site and the reclaimed quarry pit lake on the Plant Site to result in a substantial adverse effect to special status-species would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.4-4: Have a Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community

As previously discussed, special-status plant communities are not present within either the Plant Site or Quarry Site. Although no sensitive plant communities are found on the project sites, the San Joaquin River located to the west, supports a Great Valley Mixed Riparian Forest. There is also riparian habitat located immediately north of the Plant Site and south of Little Dry Creek. As shown on Figure 2-7 and Figure 2-8 of Chapter 2 of this Draft EIR, the proposed mining areas within the project sites are setback from the river and creek. Therefore, no riparian habitat would be directly disturbed as a result of the proposed project.

With regard to potential indirect impacts on surrounding riparian habitat, the Plant Site Groundwater Conditions Report (Appendix G-3) and Quarry Site Groundwater Conditions Report (Appendix G-4) indicate that the pumping of the quarry pits on the project sites and subsequent formation of a quarry pit pond on the Plant Site and quarry pit lake on the Quarry Site would result in decreased groundwater levels in the areas surrounding the project sites. This in turn could result in adverse effects on the riparian habitat, should the plant species that make up the nearby wetland or habitat lose access to groundwater important to their survival (groundwater dependent ecosystems) or to river flow water important to their survival (river flow dependent ecosystems).

As described previously, the survey of potential groundwater dependent vegetation within 500-feet of the Plant Site (ELMT 2024c; see Appendix E-5 of this Draft EIR) identified two dominant potential groundwater dependent species within the survey area: mulefat and sandbar willow. Several tree species that were found in more moderate numbers include cottonwood, black willow, elderberry and valley oak. Collectively these six species constituted 97% of the potential groundwater dependent vegetation. The remaining 3% include additional tree species (walnut, eucalyptus, salt cedar, arroyo willow and black oak) and different shrub or aquatic species (buttonbush, California blackberry, nettle, cattail, California bulrush, and umbrella sedge).

Based on the data provided in the Plant Site Groundwater Conditions Report (Appendix G-3), groundwater levels in areas surrounding the Plant Site are more than 30 feet deep at most times with higher water levels observed immediately following particularly wet winters (EMKO 2024). These water level peaks occur infrequently and are not a source of continuous water supply to any overlying vegetation. Therefore, the depth to groundwater in the area is typically deeper than that which could support riparian vegetation, wetlands, or streamflow (North Kings Groundwater Sustainability Agency [GSA] 2022). This indicates that the potential groundwater dependent species identified in the survey are likely dependent on rainfall, not groundwater, as a source of water. This is reflected in Figure 4.4-5, "North Kings GSA Groundwater Dependent Ecosystems," which shows the locations of possible groundwater dependent ecosystems in the North Kings GSA. The figure shows the areas surrounding the Plant Site as areas where the potential for the occurrence of groundwater dependent ecosystems has been rejected as potentially suitable for groundwater dependent ecosystems. The Groundwater Sustainability Plan does indicate that groundwater dependent ecosystems may occur within 100-feet of the San Joaquin River. The San Joaquin River is approximately 2,500-feet from the Plant Site. As shown in Table 4.10-8, "Estimated Drawdown of Groundwater Levels in Wells Near the Plant Site," in Section 4.10 of this Draft EIR at this distance, the decrease in groundwater levels as a result of the proposed project would be 0 to 1 foot. This level of drawdown is generally within normal seasonal fluctuations of groundwater and therefore would be unlikely to have an adverse effect on groundwater dependent ecosystems or on river flow dependent ecosystems.

Thus, the potential for project dewatering and reclaimed groundwater elevations at the Plant Site to result in an adverse effect to groundwater dependent ecosystems and river flow dependent ecosystems would be less than significant.

Dewatering of the existing quarry pit at the Quarry Site currently affects most of the alluvium on and adjacent to the site (EMKO 2023). Since almost all (90%) of the alluvium has already been removed from the Quarry Site, no further effects related to dewatering can occur within the alluvium (EMKO 2023). Thus, the potential of the project dewatering and reclaimed groundwater elevations at the Quarry Site to result in an adverse effect to groundwater dependent ecosystems in the area would be less than significant.

With regard to river-flow dependent ecosystems on the Quarry Site, the analysis completed by KDSA (2021) and EMKO (2023) shows that the hydraulic conditions are such that the proposed project would not result in significant changes in the volume of water flowing from the river through the alluvium and weathered rock. This issue is discussed in greater detail in Impact 4.10-12 of Section 4.10. Consequently, the potential

of project dewatering and reclaimed groundwater elevations at the Quarry Site to result in an adverse effect on river flow dependent ecosystems would be less than significant.

Another potential indirect impact to riparian habitat could occur if blasting at the Quarry Site destabilized the San Joaquin River bank along the western edge of the Quarry Site and thereby adversely impacted the riparian habitat along the bank, or if blasting generated projectiles that could damage riparian habitat, causing breakage or other damage. The potential impacts of blasting are discussed in detail in Section 4.13, "Noise," of this Draft EIR. Vibra-Tech Engineers completed a study titled Rock Blasting Induced Ground Vibration Effects of Structural Integrity of nearby San Joaquin River Embankments that identified vibration thresholds for the San Joaquin River embankment (Appendix H-4). Vibra-Tech also completed a study titled Geophysical Investigation (Seismic Refraction and MASW Surveys) that consisted of an on-site geophysical investigation to determine the shear wave velocities of the river embankment (Appendix H-5). Based on a factor of safety, the natural frequencies of the river embankments, the river cross section profile, existing available vibration thresholds, and Vibra-Tech Engineer's experience a velocity-frequency-based vibration criterion was developed and is displayed in Figure 4.13-6, "San Joaquin River Embankment Vibration Threshold Curve." At low frequencies (1-10 Hz) the vibration threshold is 0.50 in/sec, which is the most restrictive vibration amplitude shown in Figure 4.13-6. Therefore, the predicted vibrations in this impact analysis are compared to the 0.50 in/sec low frequency limit.

The *Blast Impact Analysis* (Appendix H-3) completed for the proposed project indicates that without appropriate vibration and airblast reduction measures, blast-induced groundborne vibration could exceed bank stability threshold. The Blast Impact Analysis Peer Review (Appendix H-7) recommends adherence to a blasting program that conforms to the OSMRE (1987) *Blasting Guidance Manual* to avoid blast-induced impacts and recommends the implementation of specific mitigation measures that require beginning hard rock blasting towards the center of the Quarry Site, implementing a blast monitoring plan, and preparing and updating a blasting plan annually.

Mitigation Measure 4.10-1 would require implementation of the *Blasting Protocols* (Appendix H-6) which specifies that blasting must begin at the center of the Quarry Site so that monitoring of groundborne vibration can occur and be used to verify that predicted maximum ground vibrations are consistent with actual ground vibration measurements and allow for adjustments in blasting design to occur based on the monitoring results. The *Blasting Protocols* detail requirements for the implementation of a blast monitoring program that includes ground vibration measurements, air overpressure measurements, visual inspection of the San Joaquin River embankment whenever blasting occurs within 1,000 feet of the embankment and depths less than 100

feet within the hard rock portion of the quarry pit (measured at the contact between alluvium and rock). Should significance thresholds be exceeded or signs of instability of the embankment (such as slumping or cracking) be noted, the County must be notified within 48 hours. If it is determined that the instability is the direct result of blasting, and not due to natural water erosion, with or without flooding, then a corrective action plan must be developed that identifies changes to the blasting program to prevent future exceedances. The *Blasting Protocols* also detail the requirements for complaint response procedures; record keeping; and annual reporting of monitoring, complaints investigations, and corrective actions.

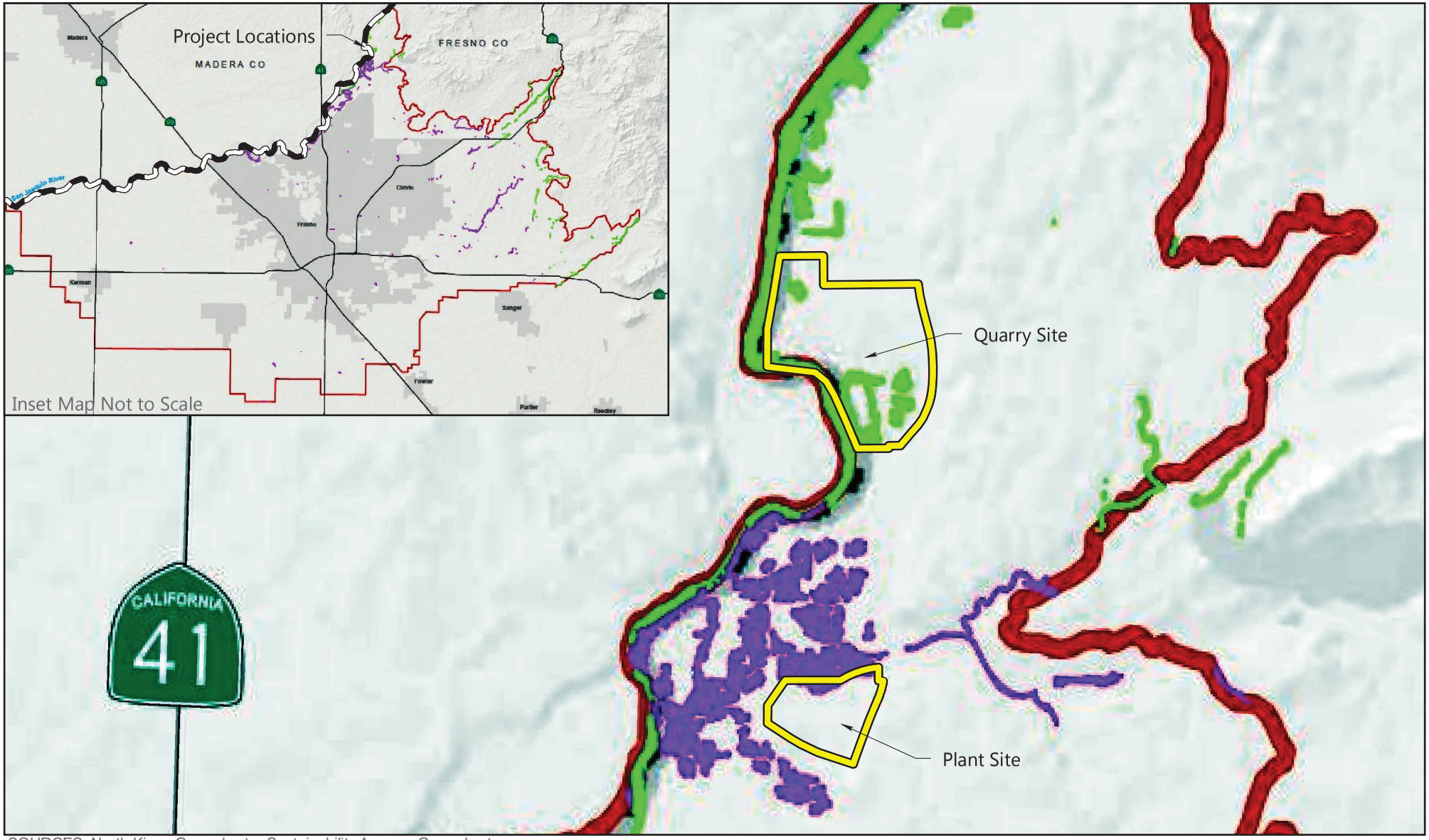
Lastly, *the Blasting Protocols* would require the operator of the Rockfield Quarry to develop an annual Blasting Plan that includes the proposed blasting designs for areas proposed for blasting each year. The blasting design must be supported by calculations that maintain blast-induced vibrations below the significance thresholds. The plan must be submitted to the County each year for review. With implementation of Mitigation Measure 4.10-1, the potential of the proposed project to generate substantial groundborne vibration that could destabilize the riverbank along the western edge of the Quarry Site would be less than significant.

Lastly, indirect impacts to riparian habitat could occur from fine materials and dust settling on vegetation. The generation of dust by the proposed project is discussed in detail in Section 4.3, "Air Quality," of this Draft EIR. Mitigation Measures 4.3-2a, -2b, and -2c would require that all equipment with off-road engines to be retrofitted or upgraded to meet the Tier 4i Particulate Emissions standard and would require dust from unpaved roads and stockpiles to be controlled by the application of dust suppressants. With implementation of these measures, the generation of particulate matter would be minimized and the potential for dust to be generated from the project sites in amounts that could damage surrounding vegetation would be less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures: *Implement Mitigation Measures 4.10-1 and 4.3-2a, -2b, and -2c.*

Level of Significance After Mitigation: Less than significant.



SOURCES: North Kings Groundwater Sustainability Agency, Groundwater Sustainability Plan 6-13-2022; arranged by Benchmark Resources in 2023

Project Boundary

County Boundary (See Inset)

Highway

Rejected Groundwater Dependent Ecosystems (GDE)

North Kings GSA

Possible GDE

BENCHMARK RESOURCES

N

0 0.5 1 2 Miles

North Kings GSA Groundwater Dependent Ecosystems

ROCKFIELD MODIFICATION PROJECT

DRAFT EIR

Figure 4.4-5

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Impact 4.4-5: Have an Adverse Effect on Protected Wetlands or Waters of the State

As described above in Section 4.4.1.7, "Wetlands and Waters of the State," the project sites do not contain any protected wetlands. The ponds and water conveyance channels are artificial wetlands constructed and maintained for active surface mining and do not fall under the regulatory authority of the Army Corps, SWRCB, or CDFW. Therefore, the proposed project would not have an adverse effect on protected wetlands.

The San Joaquin River and Little Dry Creek are waters of the United States and State. Although the project would not directly impact these water bodies, the drawdown that would result from dewatering of the quarry pits at the Plant Site and Quarry Site during mining, and the formation of a quarry pit pond at the Plant Site and quarry pit lake at the Quarry Site after the completion of mining, could potentially reduce flows in this river and creek. However, in the area of the Quarry Site, the anticipated groundwater level drawdown would be focused primarily within the weathered rock and hard rock as described below. The groundwater contours, isotope data, aquifer pumping test measurements, and water quality data provided in the groundwater conditions reports prepared for the project taken together demonstrate that the San Joaquin River is not in direct hydraulic communication with the weathered rock and hard rock at the Quarry Site. Thus, dewatering of these deeper geologic units would not affect the quantity of water in the river (Kenneth D. Schmidt & Associates 2021). The *Groundwater Sustainability Plan* (2020) for the North Kings Groundwater Basin supports this conclusion stating that, "due to groundwater pumping and construction of dams on the San Joaquin River, groundwater levels have declined significantly, particularly in the Fresno-Clovis Metropolitan area where there is a significant cone of depression." As a result, during normal to dry hydrologic years, the San Joaquin River is no longer connected to the regional aquifer system and is considered a "losing" stream, meaning that it loses water volume through percolation and no groundwater discharges into the river. Little Dry Creek has been similarly affected by groundwater level declines. Thus, further drawdown of groundwater levels as the result of dewatering would not adversely affect streamflow in either the San Joaquin River or Little Dry Creek because as described above dewatering of these deeper geologic units would not affect the quantity of water in the river.

Level of Significance: Less than significant

Mitigation Measure: None required**.**

Impact 4.4-6: Interfere with Native Resident or Migratory Fish or Wildlife Species Movement, Corridors, or Nursery Sites

The San Joaquin River corridor is located adjacent to the western boundary of the Quarry Site and approximately 0.6 miles west of the Plant Site. The corridor supports a Great Valley Mixed Riparian Forest that is largely undisturbed. Little Dry Creek also includes a riparian corridor approximately 0.1 miles to the north of the Plant Site, with a connection to the San Joaquin River. The San Joaquin River corridor is considered a significant wildlife movement corridor that provides natural areas for wildlife to move through the region in search of food, shelter, or nesting habitat. Additionally, the river could be used as a wildlife movement corridor to facilitate movement further into the Central Valley.

Plant Site

The Plant Site was established as an active mining facility in 1924 and has been in continuous use since that time. The proposed project would continue mining and processing operations within the footprint of the existing operations for up to 30 years. Since the existing Plant Site is almost entirely disturbed, this continuation of mining and processing activities is not expected to modify or compromise wildlife movement opportunities or prevent the surrounding habitat from continuing to function as a wildlife corridor. Upon completion of mining and reclamation, the final reclaimed use on the site would be open space, and riparian and open water wildlife habitat, and would also not interfere with fish or wildlife. Thus, the potential of the proposed Plant Site mining operations to interfere with native resident or migratory fish or wildlife species movement, corridors, or nursery sites would be less than significant.

Quarry Site

Mining activities at the Quarry Site have been in continuous use for over 30 years. The proposed project would deepen the mining operations within the footprint of the existing operations to mine the hardrock of the granite that lies beneath the alluvial deposit currently being mined. This downward direction of mining activities is not expected to compromise wildlife movement opportunities or prevent the surrounding habitat from continuing to function as a wildlife corridor. However, the proposed project would introduce blasting to the Quarry Site. Blasting generates groundborne noise and vibration that could impact fish in the San Joaquin River.

Fish species that occur in the San Joaquin River include largemouth bass, bluegill (*Lepomis macrochirus*), catfish, and common carp (*Cyprinus carpio*). Rainbow trout (*Oncorhynchus mykiss*) that are triploid (fish that is sterile) are planted for recreation. A Central Valley spring-run reintroduction effort for juvenile spring- and fall-run Chinook salmon

(*Oncorhynchus tshawytscha*) is being undertaken on the San Joaquin River by the Bureau of Reclamation and others as part of the San Joaquin River Restoration Program. The river contains seasonal habitat for rearing and holding of juvenile spring- and fall-run Chinook salmon and are potential breeding habitat for spring- and fall-run Chinook salmon.

In 2013, the Alaska Department of Fish and Game (ADF&G) promulgated the Alaska Blasting Standard for the Proper Protection of Fish (Alaska Department of Fish and Game 2013). The blasting standard states the following:

> *Instantaneous pressure rise in the water column in rearing habitat and migration corridors is limited to no more than 7.3 psi where fish are present. Peak particle velocities in spawning gravels are limited to no more than 2.0 in/s during the early stages of embryo incubation before epiboly is complete.*

In August 2021, Vibra-Tech evaluated the proposed blasting limits against the Alaska Department of Fish and Game blasting standard (Appendix E-4). The evaluation concluded that ground vibrations from the project's proposed blasting limits at the crest of the embankment, which is closer than the river's edge, are limited to 0.5 in/sec. This level of ground vibration is significantly below the 2.0 in/sec limit for the protection of embryos in spawning gravels.

Explosives would not be detonated in the waters of the San Joaquin River from the mining operation, therefore overpressures from the blasting events can only come from induced ground vibration events. The Vibra-Tech evaluation determined that based upon the project's blast designs used to maintain safe ground vibration levels for the stability of the slope, the resulting overpressures in the waters of the San Joaquin River due to adjacent blasting would be less than 1 psi. This level of overpressure would be significantly below the 7.3 psi limit established for the safety of salmon in the current Alaska Department of Fish and Game blasting standard. Thus, the potential of the proposed Quarry Site mining operations to interfere with native resident or migratory fish or wildlife species movement, corridors, or nursery sites would be less than significant. Upon completion of mining and reclamation, the final reclaimed use on the site would be open space, and riparian and open water wildlife habitat, and would also not interfere with fish or wildlife.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.4-7: The Project Could Conflict with Local Policies or Ordinances Protecting Biological Resources

The proposed project's consistency with local policies or ordinances protecting biological resources are addressed in detail in Table 4.11-1, "Project Consistency with Local Planning Documents," in Section 4.11, "Land Use and Planning," of this Draft EIR. As shown in Table 4.11-1, the project would be consistent with each of the policies applicable to the project and related to biological resources. Policies OS-E.3, OS-E.12, OS-E.13, OS-E.16, OS-E.17, OS-F.3, OS-F.8, and OS-F.10 support the protection and preservation of valuable wildlife habitats, natural vegetation, and other sensitive natural communities such as wetlands. As discussed in Impacts 4.4-1, 4.4-2, 4.4-3, and 4.4-4, the project sites are heavily disturbed and do not support any special-status plants, significant natural vegetation, valuable wildlife habitat, or sensitive natural communities. The riparian habitat associated with the San Joaquin River west of the project sites provides valuable wildlife habitat. This habitat is located 0.6 and 0.1 miles west of the Plant Site and Quarry Site, respectively, and project activities would not extend offsite and therefore would not directly impact these resources. However, indirect impacts could occur and are described above. With implementation of the mitigation measures provided in this section, project activities would not adversely affect any biological resources on or off the project sites and would be consistent with these policies. Policies OS-E.9 and OS-F.5 require preparation of biological resource evaluations based on field reconnaissance performed by qualified biologists. As discussed in Section 4.4.1.2, biological resource evaluations were conducted for each project site (see Appendices E-1 and E-2) and used to support the preparation of this Draft EIR. The project would be consistent with the biological resource policies contained in the Fresno County General Plan. With mitigation, this impact would be less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure: *Implement Mitigation Measures 4.3-2a, 4.3-2b, 4.3-2c, 4.4-1a, 4.4-1b, 4.4-1c, and 4.13-6.*

Level of Significance After Mitigation: Less than significant.

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4.5—CULTURAL RESOURCES

This section of the Draft EIR describes cultural resources at the Plant Site and Quarry Site as they exist today, presents the regulatory framework within which cultural resources are evaluated, and analyzes the potential impacts to cultural resources from the mining, processing, production, and reclamation activities of the proposed project. Mitigation measures to protect cultural resources are recommended, as appropriate, where potential impacts are determined to be significant. This section takes into consideration the geologic, archaeological, and historical settings and known cultural resources in the project vicinity. Paleontological resources are addressed in Section 4.7, "Geology and Soils," and Tribal Cultural Resources are addressed in Section 4.18, "Tribal Cultural Resources," of this Draft EIR.

The information in this section is based on a peer review of an applicant-prepared cultural and paleontological resource inventory of the Plant Site and Quarry Site and publicly available sources. The applicant-prepared study used is:

- *Cultural and Paleontological Resource Inventory for the CEMEX Rockfield Modification Project*, Fresno County, California. October 2019, revised July 2020.

This document contains confidential information and is not included as an appendix to this Draft EIR. However, the documents, with redaction of certain confidential information including site records, are on file with the Fresno County Planning Department.

The Cultural and Paleontological Resource Inventory prepared by Applied EarthWorks, Inc. (Applied EarthWorks) was peer reviewed by County-retained cultural resources consultant InContext in April 2020. InContext provided comments on the report and requested revisions. The report was revised in July 2020, reviewed again, and was determined to be adequate in August 2020. The peer review letter reports are on file with the County.

4.5.1 Environmental Setting

This section describes the existing environment, previously recorded cultural resources, cultural resources identified via pedestrian survey, and burial site sensitivity within and in the vicinity of the Plant Site and Quarry Site.

Applied EarthWorks conducted a cultural resource inventory at the Plant Site and Quarry Site to determine whether cultural resources are present. The inventory included a records search at the Southern San Joaquin Valley Information Center (SSJVIC) of the

California Historical Resources Information System (CHRIS), archival research with the Fresno County Historical Society, a search of the Native American Heritage Commission's (NAHC) Sacred Lands File (see Section 4.18), a desktop buried site sensitivity assessment, and an archaeological pedestrian survey of the project sites.

4.5.1.1 Physical Environment

The Plant Site and Quarry Site lie between 300 and 350 feet above mean sea level (amsl) along the contact zone between the Sierra Nevada geomorphic province and the San Joaquin Valley, immediately adjacent to the San Joaquin River. The western slope of the Sierra Nevada has numerous drainages that carry more than half the annual runoff in California (Moratto 1984:13, cited in Applied EarthWorks 2020). The major watercourse that drains the Plant Site and Quarry Site is the San Joaquin River. Smaller streams that feed into the San Joaquin River, such as Little Dry Creek, provided resources that helped support prehistoric and historic inhabitants. The lush riverine habitat provided an abundance of aquatic plants, diadromous fish, beaver, and other resources heavily relied upon prior to the twentieth century. In the twentieth century, these water systems were impounded to provide energy for hydroelectric plants and irrigation water for agricultural enterprises.

4.5.1.2 Historic Context

The following discussion provides the historic context for the Plant Site, Quarry Site, and their vicinities.

Prehistory

The project area was inhabited by two bands of Native American Yokuts (Kroeber 1976:484; Spier 1978:471; Wallace 1978a:462). The Kechayi band of the Foothill Yokuts inhabited lands that extended north from Friant along the San Joaquin River to Willow Creek. The Wakichi band of the Northern Valley Yokuts utilized the land extending south along the San Joaquin River from Friant to around Pinedale (Golla 2011:153).

The impression gained from investigations in the central San Joaquin Valley and neighboring foothills is one of highly mobile foragers who were slowly changing lifeways and becoming more sedentary due to ecologically driven change in economics, social organization and political structure. The shift in resource procurement from small animals and hard seeds to acorns and larger game suggests intensified and more specialized use of local resources over time.

Early Regional Settlement

The first Europeans known to have entered the San Joaquin Valley were Spanish soldiers led by Pedro Fages who entered the valley through Tejón Pass in 1772 (Wallace 1978: 459, cited in Applied EarthWorks 2020). Four years later, Spanish explorer Francisco Garcés also passed through the region. Other Europeans did not follow until Lieutenant Gabriel Moraga led a group of Spanish explorers into the San Joaquin Valley in 1806 (Clough and Secrest 1984: 25–27, cited in Applied EarthWorks 2020). Moraga's party intended to locate new lands for missions, find and return Native Americans who had attempted to flee missions, and relocate stolen livestock. Moraga is credited with naming both the Kings and San Joaquin rivers. It was not until the 1820s that another non-Native would traverse the area, when Jedediah Smith arrived in California to trap for fur. He worked along the San Joaquin River in 1826 and 1827 before moving north to the Sacramento Valley. Smith's adventures included friendly encounters with the Southern Yokuts near the Kings River and trapping and camping along the San Joaquin River (Clough and Secrest 1984: 27, cited in Applied EarthWorks 2020). After Smith's visit, other trappers followed until about 1837 when fur-bearing animals were nearly gone from the valley.

In the meantime, Mexico had won independence from Spain in 1821. A decade later, Mexican began secularization of the missions and expanded the land grant system to individuals other than retired soldiers. During this time, many of the land grants were made in the interior of California, including the *Rancho Laguna de Tache* to Manuel Castro in 1843, approximately 27 miles south of the project area. After gold was discovered in the Sierra Nevada in 1848, people from all over the world flocked to the state. By 1852, the first sawmill was constructed to supply lumber that was in heavy demand by miners. Mining claims were established along the San Joaquin River and various other localities throughout the foothills, and businesses were soon founded to profit from the miners' needs for services and supplies. Ferries were established on major rivers, hotels and trading posts were constructed, and stage lines began carrying mail and passengers. It was also during the 1850s that Fresno County experienced an influx of Chinese immigrants seeking to establish themselves as miners or businessmen profiting from the gold rush (Clough and Secrest 1984: 62, cited in Applied EarthWorks 2020).

Conflicts and hostilities between the settlers and Native American (Yocuts) inhabitants resulted in the construction of Fort Miller, a military installation founded in 1851 to protect the settlers from potential retaliations by the Native Americans (Clough and Secrest 1984: 69, cited in Applied EarthWorks 2020). The fort, located immediately north of Friant under the current Millerton Lake reservoir, was deactivated in 1857 when it was determined that there was no further need for military protection. In 1863, during the Civil War, actions by local Confederate sympathizers calling themselves Knights of the

Golden Circle caused the army to reoccupy the fort (Clough and Secrest 1984: 74, cited in Applied EarthWorks 2020). The fort was abandoned for the last time in 1864. Two years later, it was sold to Judge Charles A. Hart as Fort Miller Ranch. Friant Dam was constructed between 1939 and 1942, and the ranch was completely inundated.

Transportation Systems

In 1853, Charles Porter Converse began operating a ferry on the San Joaquin River immediately downstream from Fort Miller. Converse also constructed an adobe house near his business. Ten years later, Colonel James Richardson Jones built a two-story hotel with a saloon and store on the opposite riverbank (Clough and Secrest 1984: 55, cited in Applied EarthWorks 2020). This location became a popular stage stop along the Stockton to Los Angeles route and eventually came to be known as Jones Store. The Jones Store was renamed Hamptonville in the late 1870s after William Hampton took over the store.

The Central Pacific Railroad was built across Fresno County by 1872. This initiated major change in settlement distribution, transportation, the mail system, and the livelihoods of those who lived in Fresno County. Agriculture soon replaced mining as the primary source of livelihood, although mining continued along the San Joaquin River and in the hills. The CentralPacific Railroad was established in what would later become the city of Fresno because of the location of a successful wheat field owned by A. Y. Easterby (Clough and Secrest 1984: 121, cited in Applied EarthWorks 2020).

Attempts to irrigate agricultural lands in Fresno County were initiated in 1875; however, it was not until 1877 that crops, vineyards, and orchards were firmly in place (Clough and Secrest 1984: 143, cited in Applied EarthWorks 2020). To accommodate the growing needs of the farmers, numerous irrigation ditches were constructed throughout Fresno County in the early 1880s and the wine and raisin industries prospered.

In 1891, Marcus Pollasky proposed a new railroad that would connect Fresno to Hamptonville (Clough and Secrest 1984: 281, cited in Applied EarthWorks 2020). Pollasky purchased a 400-acre tract from J. R. Hampton to construct a town and the infrastructure necessary for a train depot. Excitement over the new railroad resulted in another name change for the town to “Pollasky.” Marcus Pollasky disappeared suddenly in 1891after the railroad line reached town, causing investors to sell out to the Southern Pacific Railroad (Smith and Powell 1991: C-32; Wood 1989: 9, cited in Applied EarthWorks 2020).

Lumber Industry

Lumber processing plants such as the White and Friant Lumber Company, which once occupied a large portion of the Quarry Site, were also major driving forces of infrastructural development in the region. The White and Friant Lumber Company was

founded by midwestern lumber barons T. Stewart White and Thomas Friant in the early 1900s (Johnston 1996: 11–12, cited in Applied EarthWorks 2020). By 1920, White and Friant had expanded their business to California, acquiring over 13,000 acres of forest in the Sierra Nevada near Crane Valley Reservoir (Bass Lake). The town of Pollasky was renamed "Friant," after Thomas Friant, and was the nearest rail depot to logging headquarters near Crane Valley Reservoir (Johnston 1996: 11, 20, 40, cited in Applied EarthWorks 2020). By 1923, the Minarets and Western Railway obtained operational rights from the Southern Pacific Railroad along the 9.25-mile segment between the Pinedale Junction and the northern end of the Pollasky (Friant) Branch (Johnston 1996: 15, cited in Applied EarthWorks 2020). Transportation needs of large companies like White and Friant drove the expansion of the Minarets and Western Railway, which extended from the town of Friant to logging operations in the Sierras (Johnston 1996: 40, cited in Applied EarthWorks 2020).

Mining Industry

Although the waters of the San Joaquin River in the vicinity of the project area were largely unused for agricultural purposes until the 1940s when Friant Dam was constructed, river sediments have been a valuable source of sand, gravel, and rock since the late nineteenth century. Material deposits were abundant along the San Joaquin River in Fresno County, and a 20-mile-long gravel deposit reached from the Friant Dam almost to Herndon. These seemingly inexpensive commodities found between the topsoil and underlying clay in the riverbed were mined in large quantities and have been the primary source of building materials in Fresno County. Since mining in the region began, these sand and gravel deposits have been processed in varying degrees and sold for use in highway construction and general building projects (Clough 1986: 220–221, cited in Applied EarthWorks 2020). The economic expansion in Fresno and Madera counties as well as the construction of new roads that could accommodate heavier automobile traffic increased demand for gravel, which in turn led to the emergence of mining companies operating in the San Joaquin riverbed.

In 1900, D. and J. R. Boger of Friant opened the Boger Gravel Pit at the south end of Friant and began collecting unprocessed gravel with horse-driven scrapers and loading it onto Southern Pacific railcars. The mine reportedly employed 19 men and produced 550 tons of gravel in 1913 (Byrd et al. 2017, cited in Applied EarthWorks 2020). Mines dating to this period generally operated using Fresno scrapers to move gravel to conveyor belts where it was lifted to screening plants or crushers. The gravel was then loaded onto train cars. The Boger land was later leased to the Warswick Street Paving Company, and in 1913 the California Road and Street Improvement Company of Fresno acquired the operation (Clough 1986: 221, cited in Applied EarthWorks 2020). By 1920, the California

Road and Street Improvement Company ceased operations, following a local trend in diminished productivity. Part of this is explained by the introduction of mechanized mining methods, including the use of tractors, conveyor belts, and dragline equipment. In 1924, H. W. and Isaac Ball leased a portion of the plant site to S. L. Strother of Fresno for use as a gravel mine, which resulted in construction of a railroad spur line (Clovis Tribune 1923: 21, cited in Applied EarthWorks 2020).

With the aid of new technology, local mining enterprises, such as the Grant Rock and Gravel Company, grew in capacity and productivity during this time. The Grant Rock and Gravel Company purchased the Gravel Station to add to its existing 400-acre operation. Eventually the Grant Rock and Gravel Company and the Service Rock Company merged to become the Grant-Service Rock Company (Byrd et al. 2017, cited in Applied EarthWorks 2020; John Buada, personal communication 2019). During the 1920s and 1930s, material produced by the Grant-Service Rock Company was used for roads, buildings, and Friant Dam. The construction of Friant Dam, part of the Central Valley Project, supported the continued demand for sand and gravel in the area through the 1940s. The San Joaquin River area would eventually produce 90% of the sand and gravel used as aggregate in asphalt and cement in the state construction project (Byrd et al. 2017, cited in Applied EarthWorks 2020).

4.5.1.3 Burial Site Sensitivity Assessment

Applied EarthWorks conducted a geologic and hydrologic review of the project sites to identify the potential for paleosols that may contain intact prehistoric cultural deposits at the project sites. Applied EarthWorks consulted geological maps, historical maps, geocoding technical data for a portion of the project sites (CEMEX 2018), and the U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey online database. These sources provided information regarding the natural watercourses in the area, as well as data about local soils and sediments, parent rock formations, and historical land use and vegetation patterns. This information was used to estimate the age of the sediments surrounding the project sites, consider the hydrologic and geologic forces that created and placed these sediments, and assess the likelihood of encountering buried cultural resources within the vertical project sites during project activities. Applied Earthworks' buried site sensitivity assessment determined that the project sites are dominated by Grangeville, Hanford, Tujunga, and Greenfield soil types, with minor soils consisting of Riverwash and Merced clay that overlay a granite rock base (Applied EarthWorks 2020).

Except for Riverwash, all soils at the project sites have been documented elsewhere in the San Joaquin Valley to have high to very high potential at depths up to 30 feet bgs for containing intact anthropogenic paleosols that may contain significant historical

resources (Asselin et al. 2006; Meyer et al. 2010; Onken 2020, cited in Applied EarthWorks 2020). Riverwash has low potential for harboring intact prehistoric cultural material due to its proximity to water and increased chance of soil displacement and redeposition downstream along river and creek banks.

4.5.1.4 Records Searches

Plant Site

In April 2019, the SSJVIC conducted a CHRIS search of the Plant Site and identified one historic-period building within the Plant Site footprint. The SSJVIC also identified three previously completed pedestrian surveys within the Plant Site completed between 1985 and 2001. Twelve cultural resources and 11 cultural resource studies were noted within a half-mile of the Plant Site.

Quarry Site

In July 2017, the SSJVIC performed a search of the CHRIS. The search included the Quarry Site and the surrounding half-mile area. The records search identified one cultural resource at the Quarry Site. The 2017 SSJVIC search identified two studies (FR-00238 and FR-01770) within the Quarry Site. Both studies were conducted more than 15 years ago.

4.5.1.5 Historic Land Uses at the Project Sites

Prior to conducting pedestrian surveys, Applied EarthWorks examined historical maps and aerial photographs to determine if buildings or structures once existed within the project sites and to gain insight regarding historical patterns of land use.

Plant Site

A review of historic maps (USGS 1922, 1946, 1947) indicate several buildings within and adjacent to the Plant Site during these dates. However, these buildings are no longer extant within the Plant Site, and the pedestrian survey did not identify any associated remains.

A study of aerial imagery and County of Fresno Assessor's records revealed that mining activity has been the primary focus of land use within the Plant Site since 1940, with gradual development of agricultural fields south of the project sites occurring until the present.

In 1924, H. W. and Isaac Ball leased a portion of the Plant Site to S. L. Strother of Fresno for use as a gravel mine. Archival research conducted at the assessor's office revealed that in 1947, the Grant-Service Rock Company entered into a lease with Henry and Pearl Ball to mine the land.

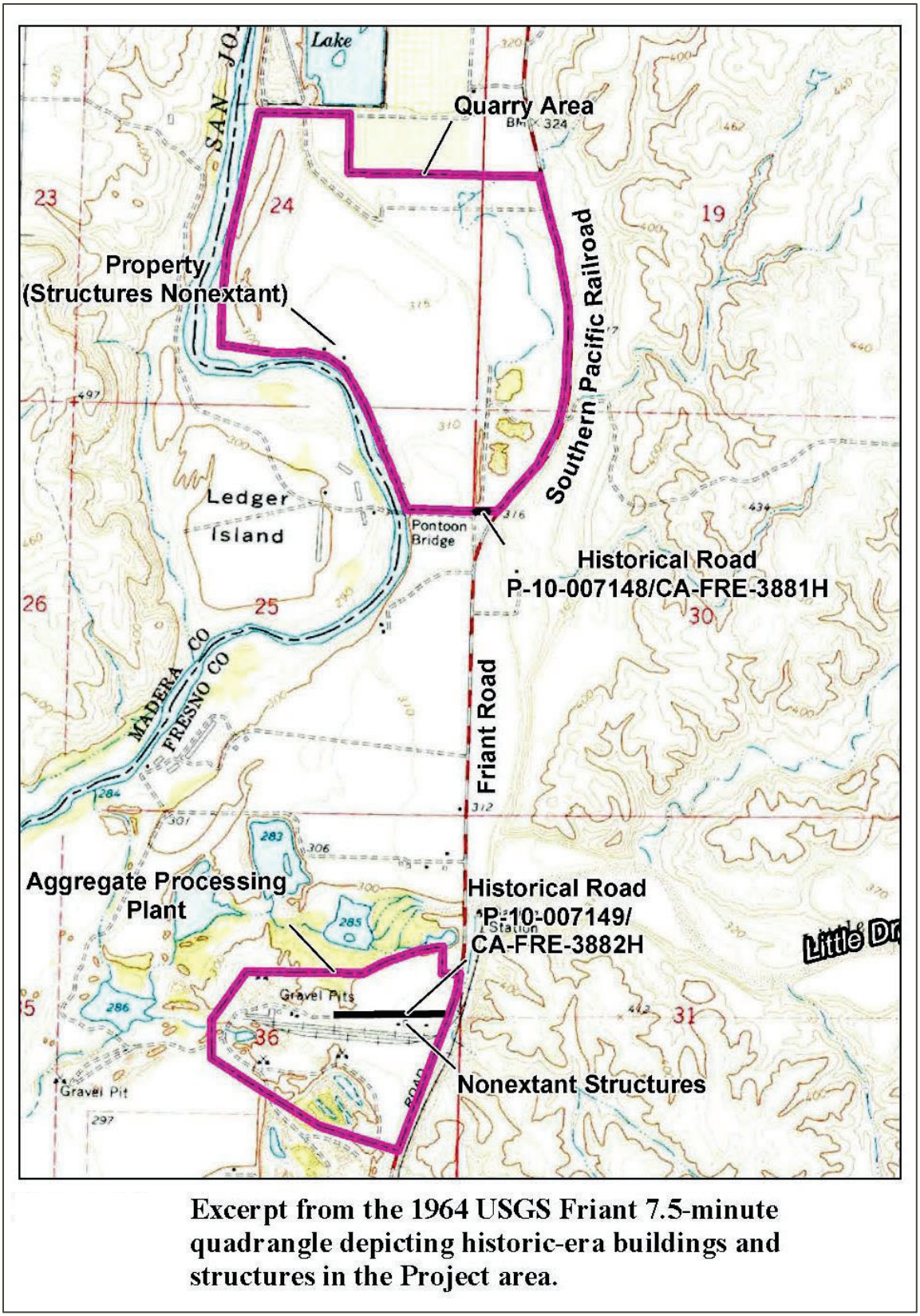
Pacific Coast Aggregates assumed the lease from the Grant-Service Rock Company in 1948. The operating company changed several times (Lonestar Industries, RMC Lonestar, RMC Pacific) between 1948 and 2005 when CEMEX (operator) became the operating company (John Buada, personal communication 2019). In 1967, the Ball family deeded a portion of the land to the County to construct the Friant Road expressway. In 2019, CEMEX Construction Materials Pacific acquired the land from the Ball Family Trust.

The 1964 topographic map indicates expanded mining activities within the Plant Site, and a railroad siding is shown to the south of the access road. Although the siding connects to the Southern Pacific Railroad as before, by this time the railroad itself terminates just northeast of the project sites at a gauging station on the south side of Little Dry Creek; the railroad continues south of the project sites. Buildings once present south of the Plant Site's main access road are no longer extant, and the access road has been repositioned farther north of the previous building locations. At the western terminus of the access road, four buildings or structures are depicted on the south side of a road curving south into a more extensive plant road system. On the eastern end of the access road, only three buildings or structures are depicted on the south side of the access road where the seven buildings once existed (see Figure 4.5-1, "1964 USGS Friant 7.5-minute Quadrangle Excerpt: Historic-era Buildings and Structures").

Quarry Site

The Quarry Site has a long history of mining beginning in 1913 when the California Road and Street Improvement Company owned the southeastern portion of the Quarry Site and operated the Gravel Station mine (Byrd et al. 2017; Progressive Map Service 1913). The California Road and Street Improvement Company closed in 1920, and the Grant Rock and Gravel Company purchased the mine, adding to their already expansive 400-acre operation. In 1935, this company combined with the Service Rock Company to become the Grant-Service Rock Company.

Two buildings, secondary roads, and a single-track spur from the Southern Pacific Railroad are depicted on the 1919 USGS Friant 7.5-minute quadrangle in the project quarry area (see Figure 4.5-2, "1919 USGS Friant 7.5-minute Quadrangle Excerpt: Historic-era Buildings and Structures"). The map does not show crop land; however, the presence of a Southern Pacific Railroad spur suggests transport of goods to or from the Plant Site and Quarry Site at the time. The spur and building located to the northeast of the spur are not shown on maps dated after 1922.



Excerpt from the 1964 USGS Friant 7.5-minute quadrangle depicting historic-era buildings and structures in the Project area.

SOURCE: Applied Earthworks, 2020; arranged by Benchmark Resources in 2022

1964 USGS Friant 7.5-Minute Quadrangle Excerpt: Historic-Era Buildings and Structures

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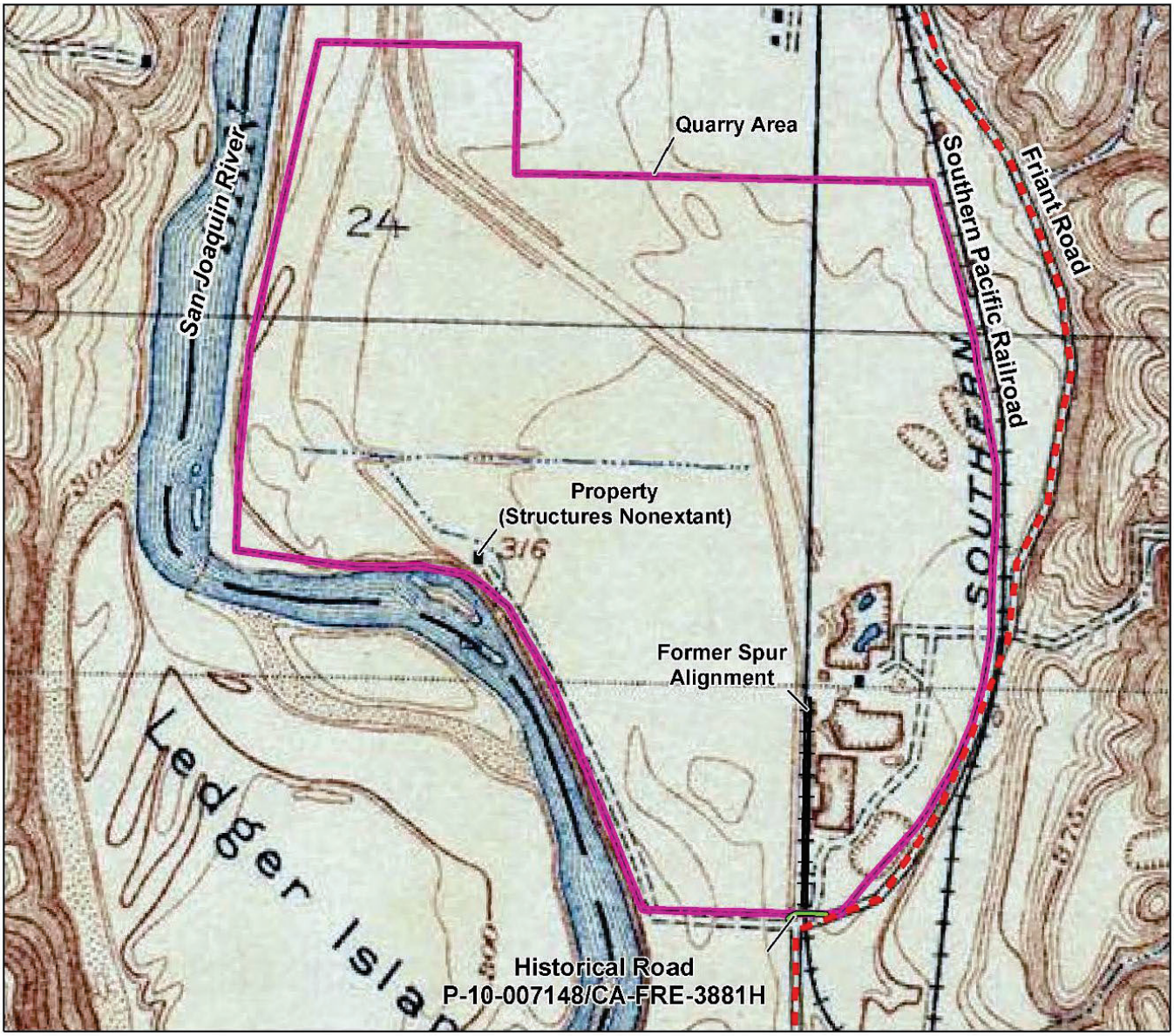

Excerpt from the 1919 USGS Friant 7.5-minute quadrangle depicting historic-era buildings and structures in the Project area.

SOURCE: Applied Earthworks, 2020; arranged by Benchmark Resources in 2022

1919 USGS Friant 7.5-Minute Quadrangle Excerpt: Historic-Era Buildings and Structures

ROCKFIELD MODIFICATION PROJECT

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Figure 4.5-2

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A second building shown near the southwestern boundary of the Quarry Site is depicted on maps dated from 1919 to 1964 (see Figure 4.5-3, "1940 Aerial Photograph Excerpt: Land Use"). Aerial imagery from 1937 to 1977 demonstrates that the building was immediately adjacent to cotton and wheat crops. A third structure in the project sites appears to the southeast on the 1964 USGS 7.5-minute topographic quadrangle.

Friant Road, which bounds the eastern side of the quarry area, is depicted on 1891 through 1935 *Progressive Atlas* maps and the 1922 to modern-day USGS topographic quadrangles. A 210-foot- long segment of the historical road, now in disuse, is in the Quarry Site between the western berm of present-day Friant Road and the San Joaquin River to the west. Between 1891 and 1930, the road alignment within the Quarry Site changed a number of times from an east-west alignment to a northeasterly curved road segment. The area was prone to frequent flooding, which may account for some of the road alignment modifications over the years. Subsequent topographic quadrangle maps from 1946, 1947, and 1964 show various realignments of Friant Road. By 1964, this segment was eliminated from Friant Road, showing a final realignment of the segment into its current east-west-trending route (Figure 4.5-3).

On August 25, 2017, Applied EarthWorks searched the Fresno County Historical Society's records and examined its collection of County atlases. These atlases indicate that land ownership and parcel boundaries within the project sites changed approximately every 10 years between 1891 and 1935 (Progressive Map Service 1891, 1907, 1909, 1913, 1920, and 1935). Investigations into individuals named as landowners yielded little information; however, by 1935 the Grant-Service Rock and Gravel Company is shown within the Quarry Site. In addition, between 1909 and 1935, the White and Friant Lumber Company occupied a large portion of the northern project sites (Progressive Map Service 1909, 1913, 1920, 1935).

4.5.1.6 Pedestrian Surveys

Applied EarthWorks conducted intensive surveys of the Plant Site and Quarry Site, using parallel and meandering transects spaced no more than 10 to 20 meters apart where possible, which included portions of the interiors and perimeters (approximately 250.5 acres) of the project sites. Areas containing raised berms, water channels used as silt runoff, or gravel stockpiles necessitated use of non-intensive pedestrian survey or wider opportunistic transects spaced 15 to 30 meters apart.

Plant Site

On April 30, 2019, and May 1, 2019, Applied EarthWorks archaeologists surveyed the Plant Site. Applied EarthWorks identified an asphalt plant that is not currently in use and contacted CEMEX Operations Manager, Pete LoCastro, who identified it as a Vulcan

Materials Company plant that was constructed during the late 1970s, making it less than 50 years old. For this reason, Applied EarthWorks did not record the structure.

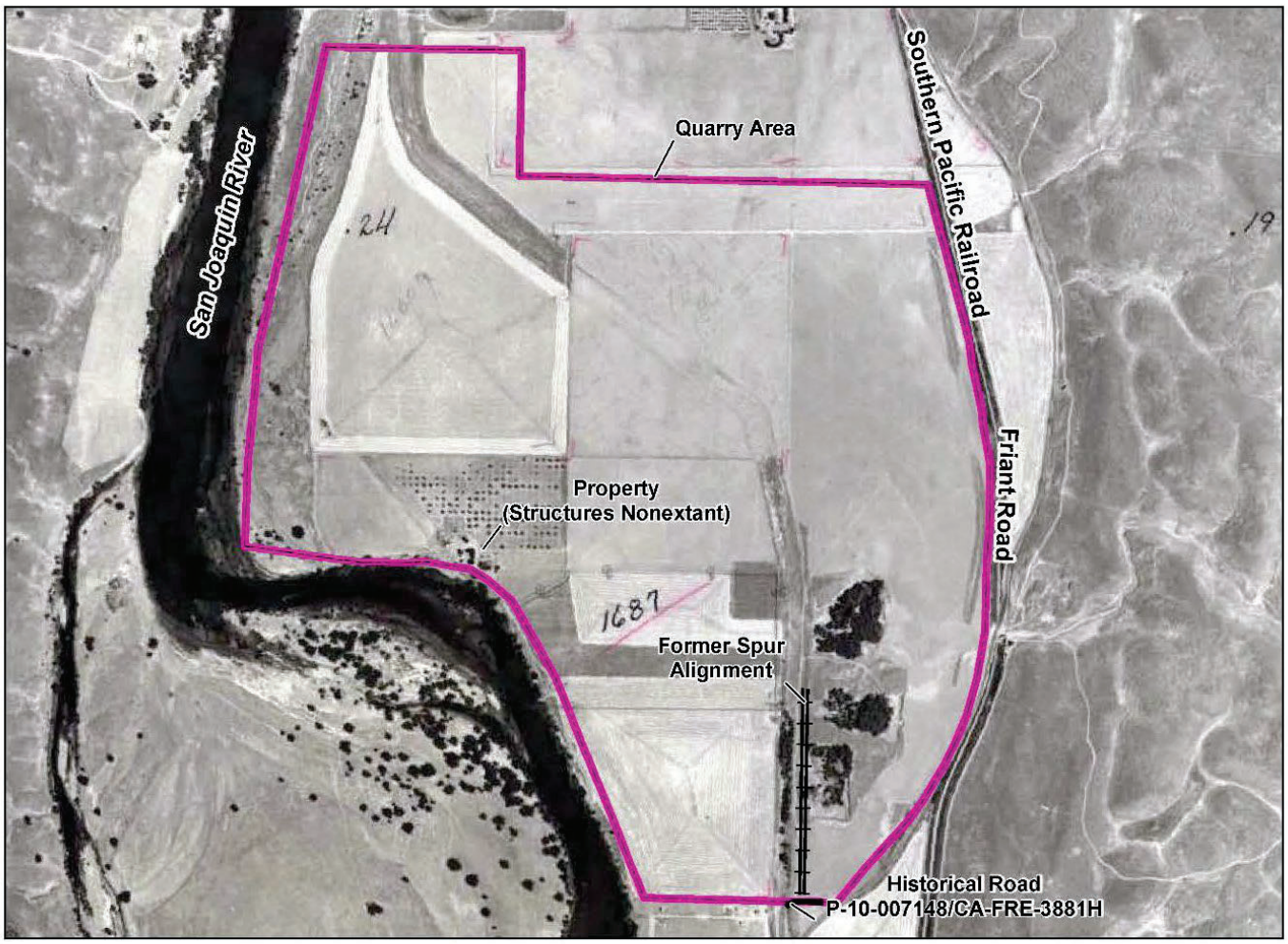
As noted in Section 4.5.1.2, above, the SSJVIC identified a historic-era house and associated garage (P-10-04486) within the Plant Site just south of the access road near Friant Road. The home, which was built between 1947 and 1950, was recorded in 2000 and evaluated as ineligible for inclusion in the NRHP (Palmer 2001). During the survey, Applied EarthWorks noted that the house is no longer standing (see Figure 4.5-4, "P-10-04486 Absence from Plant Site"). No evidence of a house footprint or foundation was observed, nor were there any historical artifacts on the ground surface.

The main access road for the Plant Site is visible on historical topographic maps and aerial images as described in Section 4.5.1.5, above, and thus was recorded as a historic-era resource (P-10-007149). This resource is discussed in greater detail below. The field crew did not identify any isolated artifacts, features, or additional historical built-environment resources within the Plant Site.

Quarry Site

On August 9 through 11, 2017, Applied EarthWorks conducted a pedestrian survey of the Quarry Site and its perimeter. On April 30, 2019, and May 1, 2019, Applied EarthWorks examined an additional area along the perimeter of the Quarry Site. Soils are composed of a sandy loam intermixed with gravels, river cobbles, and boulders. Most soils were highly disturbed by mining operations. Two areas were actively being mined during the 2017 survey, and other areas showed signs of heavy grading and mechanical disturbance. Applied EarthWorks noted an earthen ditch filled with water along the western periphery of the Quarry Site; however, the ditch appeared to be of modern construction and was not depicted on historical maps or aerial photographs. Approximately 40% of the Quarry Site was inaccessible due to mining activity, steep slopes, or water accumulation. Dense riparian vegetation surrounding water basins further reduced visibility and access.

Archival research conducted prior to fieldwork indicated the potential for discovery of historic-era archaeological deposits, isolated artifacts, or features related to historic-era buildings and the railroad spur that were present in the early twentieth century at the Quarry Site. However, Applied EarthWorks did not observe any remains of these nonextant historic-era buildings during the survey. The SSJVIC identified a previously recorded cultural resource as noted above in Section 4.5.1.5 and a bedrock mortar (P-10-001831) within the Quarry Site. Applied EarthWorks archaeologists located P-10-001831 and determined it is not within the Quarry Site Boundary (Applied EarthWorks 2020).



Portion of a 1940 aerial photograph depicting land use.

SOURCE: Applied Earthworks, 2020; arranged by Benchmark Resources in 2022

1940 Aerial Photograph Excerpt: Land Use
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Figure 4.5-3

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Overview of P-10-04486 documenting its absence from the plant area.

SOURCE: Applied Earthworks, 2020; arranged by Benchmark Resources in 2022

P-10-04486 Absence from Plant Site
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Figure 4.5-4

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Applied EarthWorks noted three features: two concrete standpipes and one pile of mixed historic-era and modern debris containing scrap metal and polyvinyl chloride (PVC) fragments. The field crew did not formally record these features as cultural resources due to indeterminate age and lack of clear association. Applied EarthWorks discovered two isolated artifacts and a historic-era road during the survey. These and all other resources are summarized in Section 4.5.1.7, below. No other archaeological or built-environment resources were identified.

4.5.1.7 Cultural Resources Within the Project Sites

Applied EarthWork's pedestrian survey resulted in the identification of two historic-period roads (P-10-007148 and P-10-007149) and two isolated artifacts consisting of a prehistoric bowl mortar (P-10-007115) and a historic-era tractor with an internal combustion engine and attached cotton picker (P-10-007116). These resources are described further below on Table 4.5-1, "Cultural Resources Within the Project Sites." Both isolates and the historic-era roads were recorded on California Department of Parks and Recreation (DPR) Primary Record forms.

Table 4.5-1
Cultural Resources Within the Project Sites

CHRIS Identification Number	Summary of Resource	California Register Eligibility[1]	Located Within Project Disturbance Area?
P-10-007148	210-feet-long segment of a 20-foot-wide gravel and dirt road with pebble inclusions that begins at the western berm of Friant Road and travels along a western trajectory, terminating at the junction of three unrecorded road segments heading west and south. This road segment retains the alignment as shown on the 1946 Friant 7.5-minute topographic quadrangle and does not show any evidence of recent improvement using gravel or grading. Aside from a modern fence that disrupts the historic-era landscape, the segment is in good condition.	Not Eligible	Yes
P-10-007149	An approximately 1,937-foot-long, 36-foot-wide asphalt road segment that provides access to the Plant Site, beginning at begins at the western berm of Friant Road and continues along a western trajectory to a network of dirt roads within the Plant Site. Overall, the road is in excellent condition, but it has been widened, paved with asphalt, and realigned since its original construction sometime between 1922 and 1937.	Not Eligible	Yes

CHRIS Identification Number	Summary of Resource	California Register Eligibility[1]	Located Within Project Disturbance Area?
P-10-007115	Palm-sized shallow bowl mortar shaped from a fine-grained granitic stone. The high degree of disturbance and lack of association with other resources suggest that the artifact was found in a secondary, or possibly tertiary, context.	Not Eligible	Yes
P-10-007116	Historic-era International Harvester McCormick-Deering Farmall row crop tractor with an internal combustion engine. The model and serial number tag on the machine date to 1944 (Tractor Data 2016). The tractor has a cotton harvester fixed to the front and a collection bin attached to the rear behind the operator's seat. All machinery appears to be intact; however, the tractor body and parts are heavily eroded.	Not Eligible	Yes

Table Source: Compiled by Benchmark Resources in 2021, based on Applied EarthWorks 2020.
Table Notes:
1. Analysis in support of these conclusions is provided in Section 4.5.4, "Project Impacts and Mitigation Measures," under Impact 4.5-1.

4.5.2 Regulatory Setting

Relevant federal, state, and local programs and policies relating to cultural resources that apply to the proposed project are discussed below.

4.5.2.1 Federal

Section 106 of the National Historic Preservation Act of 1966

The National Historic Preservation Act (NHPA) establishes the nation's policy for historic preservation and sets in place a program for the preservation of historic properties by requiring Federal agencies to consider effects to significant cultural resources (i.e., historic properties) prior to undertakings. Section 106 of the NHPA states that Federal agencies with direct or indirect jurisdiction over Federally funded, assisted, or licensed undertakings must take into account the effect of the undertaking on any historic property that is included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) and that the Advisory Council on Historic Preservation (ACHP) and State Historic Preservation Officer (SHPO) must be afforded an opportunity to comment on such undertakings, through a process outlined in the ACHP regulations at 36 Code of Federal Regulations (CFR) Part 800.

National Register of Historic Places

The NRHP was established by the NHPA of 1966 as an authoritative guide to be used by federal, state, and local governments; private groups; and citizens to identify the United States' cultural resources and to indicate what properties should be considered for protection from destruction or impairment. The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, or association. A property is eligible for the NRHP if it is significant under one or more of the following criteria as defined by NRHP:

- **Criterion A:** It is associated with events that have made a significant contribution to the broad patterns of our history.
- **Criterion B:** It is associated with the lives of persons significant in our past.
- **Criterion C:** It embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction.
- **Criterion D:** It has yielded, or may be likely to yield, information important in prehistory or history.

In general, a resource must be at least 50 years of age to be considered for the NRHP, unless it satisfies a standard of exceptional importance.

4.5.2.2 State

California Environmental Quality Act

Pursuant to the California Environmental Quality Act (CEQA), a historical resource is a resource listed in, or eligible for listing in, the California Register of Historical Resources (CRHR) (CEQA Guidelines Section 15064.5). In addition, resources included in a local register of historic resources or identified as "significant" in a local survey conducted in accordance with state guidelines are also considered historic resources under CEQA, unless a preponderance of the facts demonstrates otherwise. According to CEQA, the fact that a resource is not listed in or determined eligible for listing in the CRHR or is not included in a local register or survey shall not preclude a Lead Agency, as defined by CEQA, from determining that the resource may be a historic resource as defined in California Public Resources Code (PRC) Section 5024.1.

CEQA applies to archaeological resources when: (1) the archaeological resource satisfies the definition of a historical resource, or (2) the archaeological resource satisfies the definition of a "unique archaeological resource." A unique archaeological resource is an archaeological artifact, object, or site that has a high probability of meeting any of the following criteria:

1) The archaeological resource contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
2) The archaeological resource has a special and particular quality such as being the oldest of its type or the best available example of its type.
3) The archaeological resource is directly associated with a scientifically recognized important prehistoric or historic event or person.

Finally, CEQA Guidelines Section 15064.5(e) and (f) provides measures to protect historic resources, archeological resources, and human remains (in any location other than a dedicated cemetery) from disturbance, vandalism, or inadvertent destruction.

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is (36 CFR Section 60.2):

> "an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the state's historical resources and to indicate properties that are to be protected, to the extent prudent and feasible, from substantial adverse change."

Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks (CHLs) numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys, or designated by local landmarks programs may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria (modeled after NRHP criteria):

- **Criterion 1:** It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- **Criterion 2:** It is associated with the lives of persons important in our past.

- **Criterion 3:** It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
- **Criterion 4:** It has yielded, or may be likely to yield, information important in history or prehistory.

Resources nominated to the CRHR must retain enough of their historic character or appearance to be recognizable as historic resources and to convey the reasons for their significance. It is possible that a resource whose integrity does not satisfy NRHP criteria may still be eligible for listing in the CRHR. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data. Resources that have achieved significance within the past 50 years also may be eligible for inclusion in the CRHR, provided that enough time has lapsed to obtain a scholarly perspective on the events or individuals associated with the resource.

California Native American Graves Protection and Repatriation Act of 2001

Codified in California Health and Safety Code Sections 8010–8030, the California Native American Graves Protection and Repatriation Act (NAGPRA) is consistent with the Federal NAGPRA. According to Section 8011(a), the NAGPRA is intended to "provide a seamless and consistent state policy to ensure that all California Indian human remains and cultural items be treated with dignity and respect," the California NAGPRA also encourages and provides a mechanism for the return of remains and cultural items to lineal descendants. Section 8026 establishes a Repatriation Oversight Commission to oversee this process. The Act also provides a process for non-Federally recognized tribes to file claims with agencies and museums for repatriation of human remains and cultural items.

California Public Resources Code Section 5097

Public Resources Code (PRC) Section 5097 defines and protects archaeological, paleontological, and historical sites. Under PRC Section 5097, an archaeological site survey may be conducted to determine archaeological, paleontological, or historical features. PRC Section 5097.5 prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any lands under the jurisdiction of state or local authorities.

California Health and Safety Code Section 7050.5, 7051, and 7054

These sections collectively address the illegality of interference with human burial remains, as well as the disposition of Native American burials in archaeological sites. The

law protects such remains from disturbance, vandalism, or inadvertent destruction, and establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project, including the treatment of remains prior to, during, and after evaluation, and reburial procedures.

4.5.2.3 Local

Fresno County General Plan

The following existing Fresno County General Plan policies pertain to cultural resources and are most applicable to the project:

Section J. Historical, Cultural, and Geological Resources

Goal OS-J: To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County's historically significant resources in order to promote historical awareness, community identity, and to recognize the county's valued assets that have contributed to past county events, trends, styles or architecture, and economy.

Policy OS-J.4: The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and resources. For projects requiring ground disturbance and located within a high or moderate cultural sensitivity area, a cultural resources technical report may be warranted, including accurate archival research and site surveys conducted by qualified cultural resources practitioners. The need to prepare such studies shall be determined based on the tribal consultation process and initial outreach to local or state information centers.

Policy OS-J.5: The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the locations of archeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

Policy OS-J.6: The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.

Policy OS-J.7: The County shall maintain an inventory of all sites and structures in the County determined to be of historical significance (Index of Historic Properties in Fresno County).

Policy OS-J.10: The County shall use the State Historic Building Code and existing legislation and ordinances to encourage preservation of cultural resources and their contributing environment.

4.5.3 Significance Criteria and Analysis Methodology

4.5.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to cultural resources if it would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to California Code of Regulations (CCR), Section 15064.5;
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5; and
c) Disturb any human remains, including those interred outside of formal cemeteries.

4.5.3.2 Analysis Methodology

The National Park Service (NPS) has established a process for identifying, evaluating, and assessing effects to historic properties. Practically speaking, determinations made within a federal regulatory context are almost always universally accepted for purposes of identifying, evaluating, and assessing impacts under CEQA.

The first threshold in this process is to ascertain whether a site or built environment property within the project sites is old enough to be considered a cultural resource and, accordingly, eligible for federal and/or state registers. Consistent with 36 CFR 60.4, to be eligible for the NRHP, an archaeological or built environment resource must be 50 years old or older. Except under exceptional circumstances (NPS 1997:25–43), sites and properties less than 50 years old are dismissed from further consideration. If a cultural resource is found to meet this age criterion, the following sequential steps apply:

a) Classifying the resource as a district, archaeological site, building, structure, or object;
b) Determining the theme, context, and relevant thematic period of significance with which the resource is associated;

c) Determining whether the resource is historically important under a set of significance criteria; and
d) If significant, determining whether the resource retains integrity.

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
b) that are associated with the lives of persons significant in our past; or
c) that embody distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
d) that have yielded, or may be likely to yield, information important in prehistory or history.

Similarly, according to the CEQA Guidelines, for a resource to be eligible for listing in the CRHR, it must meet at least one of the criteria defined in PRC Section 5024.1(c), listed in Section 4.5.2.2, above.

To be included in the NRHP and CRHR, a resource must not only possess historical significance but also the physical means to convey such significance—that is, it must possess integrity. Integrity refers to the degree to which a resource retains its original character. To facilitate this assessment, the NPS (1997:44–45) provides the following definition of the seven aspects of integrity.

a) Location is the place where the historic property was constructed or the place where the historic event occurred;
b) Design is the combination of elements that create the form, plan, space, structure, and style of a property;
c) Setting is the physical environment of a historic property;
d) Materials are the physical elements that were combined or deposited during a particular period and in a particular pattern or configuration to form a historic property;
e) Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;

f) Feeling is a property's expression of the aesthetic or historic sense of a particular period of time; and

g) Association is the direct link between an important historic event or person and a historic property.

Assessing the integrity of a significant historic property/historical resource depends on an understanding of the components or features that give it significance. For this reason, the issue of integrity is addressed only after significance has been established. Moreover, cultural resources that are not significant per NRHP and CRHR criteria are by definition not eligible to either register and do not require an integrity assessment.

4.5.4 Project Impacts and Mitigation Measures

Impact 4.5-1: Substantial Adverse Change in the Significance of a Historical Resource Pursuant to CCR Section 15064.5

To be considered a historic property or historical resource, a cultural resource must possess both historical significance and retain integrity in order to satisfy the criteria defined in the implementing regulations of the two statutes (see Section 4.5.3.2, above). Typically, the first step in the CEQA compliance process is a cultural resource inventory of the proposed project area(s). Thus, Applied EarthWorks (2020) conducted a cultural resource inventory to determine whether cultural resources are present within the Plant Site and Quarry Site (see Sections 4.5.1.6 and 4.5.1.7, above). As discussed in 4.5.1.4 and on Table 4.5-1, a review of early twentieth-century maps and aerial photographs of the project sites showed farmland, historic-era buildings, roads, a railroad spur, and a railroad siding.

Plant Site

The SSJVIC records search identified one previously recorded historic resource (P-10-004486) within the Plant Site boundary (see Section 4.5.1.3, above). P-10-004486 or signs of its former existence were no longer present during Applied EarthWorks's survey. Applied Earthworks also recorded a historic-era main access road to the processing plant (P-10-007149). An evaluation of historical significance for NRHP/CRHR eligibility for P-10-007149 is provided below.

P-10-007149

Criterion A/1: While archival research shows that the Plant Site was part of an important local mining industry and contributed to the local economy and changes in technology over time, the access road (P-10-007149) is only one element of a larger plant that is now radically altered from the original mining operation. The current

mine setup does not reflect its use between the 1920s and 1950s. The access route was last changed in 1961, reflecting the continuous changes that occurred at the site. The general plant setup continued to evolve during its various periods of usage up to the present. While the Plant Site has been significant in the development of the region, the mine plant today and the access route do not reflect this specific evolution in the industry. Therefore, P-10-007149 is not significant under Criterion A/1.

Criterion B/2: Archival research on P-10-007149 demonstrated a primary association with mining activities along the San Joaquin River rather than an association with specific person(s) with importance in the local, state, or national history. P-10-007149 is therefore not significant under Criterion B/2.

Criterion C/3: The construction date of the plant access road is unknown, but it was extant by at least 1937 and was realigned by 1964. The road was used historically to access the mining operations and distribute aggregate to construction projects in the region. The plant access road has been widened, paved, and is now atypical of historic-era roads. There is no evidence of a specific type of technology or innovation in roadway construction used in its original or current construction. Based on these factors, the plant access road is not significant under Criterion C/3.

Criterion D/4: This criterion is applicable to built environment resources if further study has the potential to yield information that cannot be obtained from other sources. Information about historic-era roads is prevalent, and further study would not add any new information; therefore, P-10-007149 is not significant under Criterion D/4.

Due to a lack of significance under Criterion A/1, B/2, C/3, and D/4, P-10-007149 is ineligible for inclusion in the NRHP and CRHR.

Quarry Site

The SSJVIC records search did not identify any previously recorded historical resources at the Quarry Site. During the field surveys, Applied EarthWorks recorded a historic-era gravel and dirt road (P-10-007148) and one isolated historic artifact (P-10-007116) (Applied EarthWorks 2020). Evaluations of historical significance for NRHP/CRHR eligibility for P-10-007116 and P-10-007148 are provided below.

P-10-007116

An isolated artifact by convention is not considered to be a significant resource eligible for inclusion in the NRHP or CRHR due to a lack of association with important events or persons of the past. Therefore, P-10-007116 is ineligible for inclusion in the NRHP and CRHR because it lacks significance under Criteria A/1, B/2, C/3, and D/4 (Applied Earthworks 2020).

P-10-007148

Criterion A/1: Originally, Friant Road provided access to the county seat of Millerton and was the first and main route between Millerton and Fresno in the 1890s and early 1900s. Archival research shows that P-10-007148 was altered in 1907 and ultimately was separated from Friant Road in 1964. Initially, this segment was part of Friant Road, a historically significant route through the region. Friant Road achieves significance for its contribution to broad patterns in history and its significant contribution to the region's culture, economics, politics, and technology (Caltrans 2016: 157). P-10-007148, however, became separated from Friant Road in 1964, and the original alignment of Friant Road at this location no longer exists. P-10-007148, as a separate and distinct route, is not associated with Friant Road and is not significant under Criterion A/1.

Criterion B/2: Applied EarthWorks' archival research did not reveal evidence that P-10-007148 is associated with one or more significant persons important in local, state, or national history and, therefore, the road segment is not significant under Criterion B/2.

Criterion C/3: The exact construction date of P-10-007148 is unknown; however, it appears to be part of the original Friant Road alignment depicted in the 1891 Progressive atlas. Additionally, Applied Earthworks did not uncover information related to its original design and/or construction methods. The segment is typical of late nineteenth and early twentieth century dirt roads. It does not represent a specific type of technology or use or innovation in roadway construction. It does not represent a unique period or method of construction. It is not the work of a master and does not have high artistic value, nor does it represent a significant and distinguishable entity whose components may lack individual

distinction. Therefore, P-10-007148 is not significant under Criterion C/3.

Criterion D/4: This criterion is most relevant for archaeological sites, but it can be applied to built environment resources if further study has the potential to yield information that cannot be obtained from archival sources. Historical information about dirt road segments is prevalent, and further study of the road would not add any new information; therefore, P-10-007148 is not significant under Criterion D/4.

Due to a lack of significance under Criterion A/1, B/2, C/3, and D/4, P-10-007148 is ineligible for inclusion in the NRHP and CRHR.

Because no significant historical resources are present at the project sites, the proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to CCR, Title 14, Chapter 3, Section 15064.5 (CEQA Guidelines Appendix G Checklist Items V[a] and V[b]). The impact would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.5-2: Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to CCR Section 15064.5

To be considered an archaeological resource, a cultural resource must possess both historical significance and retain integrity in order to satisfy the criteria defined in the implementing regulations of the two statutes (see Section 4.5.3.2, above). Typically, the first step in the CEQA compliance process is a cultural resource inventory of the proposed project area(s). Thus, Applied EarthWorks conducted a cultural resource inventory to determine whether cultural resources are present within the Plant Site and Quarry Site (see Sections 4.5.1.5 and 4.5.1.6, above). As discussed in Section 4.5.1.4, above, SSJVIC records search identified no previously recorded archaeological resources at the Plant Site and one previously recorded archaeological resource (P-10-001831) within the Quarry Site. However, Applied EarthWorks' archaeologists field checked the location of P-10-001831 and found the archaeological site was outside the Quarry Site boundary. No other artifacts, features, archaeological deposits, burials, or human remains were observed at the Plant Site during the survey.

The absence of any significant surface archaeological finds that are 50 years or older combined with the extensive vertical disturbance exceeding 30 feet bgs by mining

activities over the past 100+ years eliminates the potential for proposed project activities at the Plant Site and most of the Quarry Site to cause adverse impacts to archaeological resources that otherwise may have been present. However, proposed project activities at the 31-acre undisturbed area of the Quarry Site may result in inadvertent discovery and adverse change in significance of archaeological resources in this area, which constitutes a potentially significant impact. Mitigation Measures 4.5-2, "Inadvertent Discovery of Archaeological Resources," is provided to avoid adverse impacts to archaeological resources under the proposed project through reporting and appropriate treatment of inadvertent discoveries. Therefore, impacts to the significance of archaeological resources under the proposed project would be less than significant with mitigation incorporated.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.5-2: *Inadvertent Discovery of Archaeological Resources*

If prehistoric or historic-era cultural resources are encountered during project activities, all ground-disturbing activities within 50 feet of the find shall cease. The qualified archaeologist shall evaluate the significance of the resources and recommend appropriate treatment measures. Per CEQA Guidelines Section 15126.4(b)(3)(A), project redesign and preservation in place shall be the preferred means to avoid impacts to significant. archaeological sites. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with Fresno County, which may include data recovery or other appropriate measures. Fresno County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited curational facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to Fresno County and to the Southern San Joaquin Valley Information Center. Construction can recommence based on direction of the qualified archaeologist and with concurrence from the County.

Level of Significance After Mitigation: Less than significant.

Impact 4.5-3: Disturb Human Remains, Including Those Interred Outside of Formal Cemeteries

As described in Section 4.5.1.3, above, except for Riverwash, all soils at the project sites have been documented elsewhere in the San Joaquin Valley to have high to very high potential at depths up to 30 feet bgs for containing intact anthropogenic paleosols

(Asselin et al. 2006; Meyer et al. 2010; Onken 2020). Intact, well-preserved, and deeply buried paleosols have the potential for harboring significant historical resources, including human remains. However, the entire Plant Site and 91.2% of the Quarry Site have been subject to continuous deep mining activity exceeding 30 feet bgs for over 100 years resulting in the removal of these paleosols (see Figure 4.5-5, "Area of Quarry Site Remaining to Be Mined and Relevant Soil Classifications"). Therefore, the potential for inadvertent discovery of human remains within these portions of the project sites would be very low.

Approximately 8.8% (31 acres) has not been mined at great depth within the Quarry Site. Within this area NRCS soils data reveal that portions of the unmined area have experienced broad landscape recontouring (Figure 4.5-5) indicating that the topsoil and several vertical feet bgs have been extensively modified and disturbed. As such, there is low potential for inadvertent discovery of human remains within the unmined portion of the Quarry Site.

Despite the low probability for the proposed project to impact intact buried cultural deposits at the Quarry Site, human remains may be present, constituting a potentially significant impact. Therefore, Mitigation Measure 4.5-3 is provided to ensure that appropriate steps are taken in the event human remains or unmarked burials are inadvertently discovered during project activities. Impacts to human remains would consequently be less than significant with mitigation incorporated.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.5-3: *Inadvertent Discovery of Unmarked Burials*

If human remains are uncovered during project activities, the project operator shall immediately halt work within 50 feet of the find, contact the Fresno County Coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.4 (e)(1). If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) will be notified, in accordance with Health and Safety Code Section 7050.5(c) and Public Resources Code (PRC) 5097.98 (as amended by Assembly Bill 2641). The NAHC shall designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98, and the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in PRC Section 5097.98, with the MLD regarding their recommendations for the disposition of the remains, taking into account the possibility of multiple human remains.

Level of Significance After Mitigation: Less than significant.

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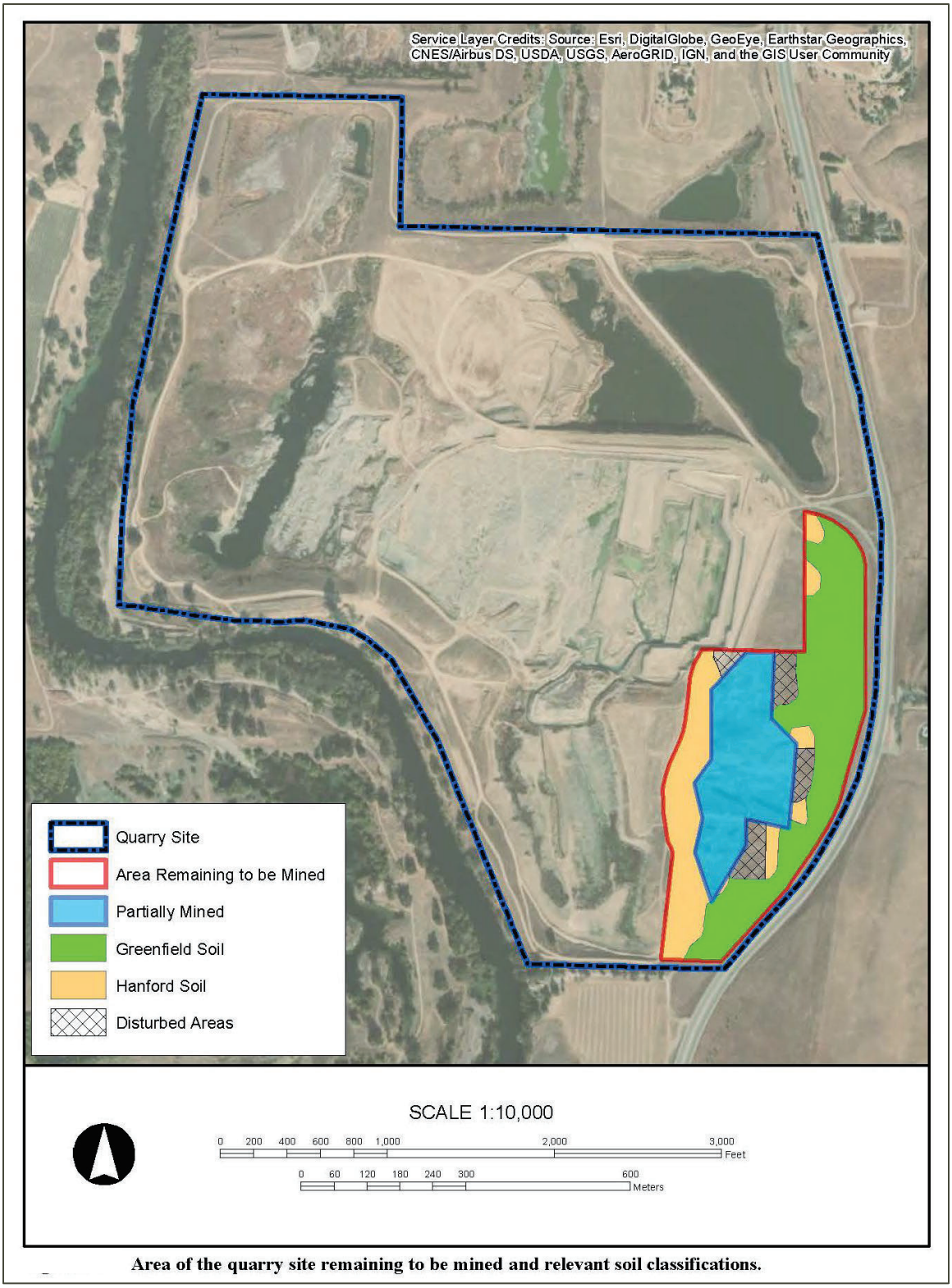

Area of the quarry site remaining to be mined and relevant soil classifications.

SOURCE: Applied Earthworks, 2020; arranged by Benchmark Resources in 2022

Area of Quarry Site Remaining to Be Mined and Relevant Soil Classifications
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.5-5

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4.6—ENERGY

This section of the Draft EIR documents potential project impacts associated with energy. Impacts considered in this section include the potential for project operation and construction activities to result in environmental impacts as a result of wasteful, inefficient, or unnecessary consumption of energy resources. The section also considers whether or not the project would conflict with a state or local plan or energy efficiency.

The information in this section is based on applicant-provided information and publicly available sources. See Section 4.3, "Air Quality," for discussion regarding air quality, air pollutant emissions, and the associated human health risks and Section 4.8, "Greenhouse Gas Emissions," of this Draft EIR for discussion regarding climate change and greenhouse gas emissions.

4.6.1 Environmental Setting

Scientists define energy as the ability to do work. Modern civilization is possible because people have learned how to change energy from one form to another and then use it to do work. People use energy to carry out their daily activities, such as travelling, cooking, manufacturing, and more (United States Energy Information Administration [EIA] 2020).

Energy usage is typically quantified using the British Thermal Unit (BTU). California's total energy consumption was 7,967 trillion BTUs in 2018, which equates to an average of 202 million BTUs per capita. Of California's total energy usage, the breakdown by sector is 40% transportation, 23% industrial, 19% commercial, and 18% residential (EIA 2021). The most common sources of consumptive sources of energy are electricity, natural gas, and petroleum. Electricity and natural gas in California are generally consumed by stationary users such as residences and commercial and industrial facilities, whereas petroleum consumption is generally accounted for by transportation-related energy use. These three sources are described in greater detail below.

4.6.1.1 Electricity

Electricity is the presence and flow of electric charge that can be used as a consumptive utility. It is a man-made resource that requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use.

While BTUs measure total energy usage, electricity is generally measured in kilowatt-hours (kWh) which is the standard billing unit for energy delivered to consumers by

electrical utilities. The electricity consumption attributable to Fresno County from 2009 to 2021 is shown in Table 4.6-1, "Fresno County Electricity Consumption, 2009 through 2021." As indicated, energy consumption in Fresno County varied approximately 11% over the last 10 years (California Energy Commission [CEC] 2019b).

Table 4.6-1
Fresno County Electricity Consumption, 2009 through 2021

Year	Electricity Consumption (*in millions of kilowatt hours*)
2009	7,076
2010	6,904
2011	6,885
2012	7,383
2013	7,513
2014	7,689
2015	7,685
2016	7,619
2017	7,429
2018	7,646
2019	7,445
2020	8,018
2021	8,378

Table Source: CEC 2019b

Electricity is one of the primary sources of energy consumption associated with existing mining and processing operations at the Rockfield Quarry. Electricity is supplied to the Plant Site and Quarry Site by Pacific Gas & Electric (PG&E) on existing electrical transmission and distribution systems that enter the project sites from easements along North Friant Road.

Existing electricity use at the Plant Site is rated at 1,585 kWh, and electricity use at the Quarry Site is rated at 67 kWh. PG&E's Base Interruptible Program (BIP) is the existing energy conservation measure at both the Plant and Quarry Sites. The BIP is intended to provide load reduction on PG&E's system on a day-of basis when the California Independent System Operator (CAISO) issues a curtailment notice (PG&E 2021).

4.6.1.2 Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Consumable natural gas in California is obtained in liquid form from naturally occurring reservoirs, mainly located outside the state, and delivered through high-pressure transmission pipelines. This liquid form allows large volumes of natural gas to be transported to locations unreached by gas pipelines. The

natural gas transportation system is a nationwide network, and, therefore, resource availability is typically not an issue. California gets about 10% of its liquefied natural gas from in-state production and 90% from five interstate natural gas pipelines (CEC 2021d). California does not have a liquefied natural gas terminal or any proposed liquefied natural gas terminals along the coast.

Natural gas provides almost one-third of the state's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. Nearly 45% of the natural gas burned in California was used for electricity generation, and much of the remainder consumed in the residential (21%), industrial (25%), and commercial (9%) sectors (CEC 2021e).

The natural gas consumption attributable to Fresno County from 2009 to 2021 is provided in Table 4.6-2, "Natural Gas Consumption in Fresno County 2009 through 2021." Natural gas consumption in Fresno County varied 30% over the 10-year span (CEC 2019c).

Table 4.6-2
Fresno County Natural Gas Consumption, 2009 through 2021

Year	Natural Gas Consumption *(in millions of therms)*
2009	271
2010	283
2011	296
2012	306
2013	300
2014	295
2015	300
2016	285
2017	341
2018	347
2019	352
2020	326
2021	319

Table Source: CEC 2019c

Natural gas is currently not provided or used at the Plant Site or Quarry Site.

4.6.1.3 Fuel Consumption

According to the EIA, transportation accounted for 40% of California's total energy consumption in 2018 (EIA 2021). Diesel fuel is the second largest transportation fuel used in California, representing 17% of total fuel sales behind gasoline. Nearly all heavy duty-trucks, delivery vehicles, buses, trains, ships, boats and barges, farm, construction and

heavy-duty military vehicles and equipment have diesel engines. Diesel is the fuel of choice because it has 12% more energy per gallon than gasoline and has fuel properties that prolong engine life making it ideal for heavy duty vehicle applications (CEC 2021b).

In 2020, California consumed approximately 12.5 billion gallons of gasoline and 3.0 billion gallons of diesel fuel. However, the coronavirus (COVID-19) pandemic resulted in a significant reduction in gasoline usage compared to previous years, which averaged 15.3 billion gallons of gasoline between 2015 and 2019 (California Department of Tax and Fee Administration [CDTFA] 2021a, 2021b). Usage is likely to return to pre-2020 numbers for 2021 and beyond as the population is vaccinated and people return to typical transportation habits (CEC 2021c). Diesel usage did not change significantly compared to prior years.

Fresno County gasoline sales for 2019 totaled 376 million gallons for 2019, which County accounted for approximately 2.38% and 2.87% of total statewide gasoline and diesel sales, respectively, in 2018 (CEC 2021a).

Gasoline and diesel fuel are delivered periodically to the site for use in vehicles and equipment. Existing gasoline use at the Plant Site averages 350 gallons per month, and no gasoline is currently used at the Quarry Site. Existing diesel fuel use at the Plant Site for the aggregate and ready-mix concrete operations average 18,000 gallons per month. Existing diesel fuel use at the Quarry Site averages 3,000 gallons per month. Finally, the Plant Site uses an average of 2,500 gallons of propane per month, and no propane is currently used at the Quarry Site.

4.6.2 Regulatory Setting

4.6.2.1 Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 includes the following key measures, which would aid in increasing energy efficiency in the United States (U.S.):

1) Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
2) Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by Model Year 2020; directs National Highway Traffic Safety Administration to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
3) Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Additional provisions of the Energy Independence and Security Act address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

Federal Vehicle Standards

In 2009, the NHTSA issued a final rule regulating fuel efficiency and greenhouse gas (GHG) emissions from cars and light-duty trucks for model year 2011; and, in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve the equivalent of 54.5 miles per gallon, if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy standards for medium- and heavy-duty trucks for model years 2014 through 2018. The standards for fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce fuel consumption for the affected vehicles by 6% to 23% over the 2010 baselines.

In August 2016, the USEPA and the NHTSA adopted Phase 2 of the Heavy-Duty Vehicle National Program. Phase 2 aims to set performance-based standards that would be met through wider deployment of existing and advanced technologies. For diesel engines, the proposed standards would begin for model year 2018 engines and phase in through 2027. Phase 2 is expected to reduce GHG emissions by an additional 10%.

In August 2018, The USEPA and NHTSA released a notice of proposed rulemaking called Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). This rule would modify the existing CAFE standards and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establish new standards covering model years 2021-2026. SAFE standards are expected to uphold model year 2020 standards through 2026 (U.S. Department of Transportation 2021).

4.6.2.2 State

California Environmental Quality Act

CEQA requires an EIR to include a discussion of mitigation measures to minimize significant effects on the environment relating to "wasteful, inefficient, and unnecessary consumption of energy" (PRC Section 21100(b)(3)). Appendix F of the CEQA Guidelines provides guidance for analyzing energy impacts in an EIR, but neither Appendix F itself, nor any authority, requires that an EIR discuss every possible energy impact or conservation measure listed in Appendix F. Energy impacts need only be discussed "to the extent relevant and applicable to the project" (CEQA Guidelines Appendix F Section II).

CEQA Guidelines Appendix F states, "the goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include: (1) decreasing overall per capita energy consumption, (2) decreasing reliance on fossil fuels such as coal, natural gas and oil, and (3) increasing reliance on renewable energy sources" (CEQA Guidelines Appendix F Section I).

CEQA Guidelines Section 15126.2 specifies:

> (b) Energy Impacts. If analysis of the project's energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, the EIR shall mitigate that energy use. This analysis should include the project's energy use for all project phases and components, including transportation-related energy, during construction and operation. In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project. (Guidance on information that may be included in such an analysis is presented in Appendix F.) This analysis is subject to the rule of reason and shall focus on energy use that is caused by the project. This analysis may be included in related analyses of air quality, greenhouse gas emissions, transportation or utilities in the discretion of the lead agency.

Further, CEQA Guidelines Section 15126.4(a) specifies:

> (1) An EIR shall describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy. (C) Energy conservation measures, as well as other appropriate mitigation measures, shall be discussed when relevant. Examples of energy conservation measures are provided in Appendix F.

2017 Climate Change Scoping Plan Update

In December 2017, ARB approved the 2017 Climate Change Scoping Plan Update (Scoping Plan) which identifies economically viable and technologically feasible actions that must be taken for the state to reach the 2030 Climate target to reduce GHG emissions by 40% from 1990 levels, and substantially advance toward the 2050 climate goal to reduce GHG emissions by 80% below 1990 levels. A more detailed discussion of the Scoping Plan as it relates to GHG emissions is provided in Section 4.8. However, several components of the Scoping Plan involve increasing energy efficiency and renewable energy resources.

In particular, the Scoping Plan states that the California Legislature has shaped the state's climate change program, setting out clear policy objectives over the next decade including:

- 40% reduction in GHG emissions by 2030;
- 50% renewable electricity;

- Double energy efficiency savings;
- Support for clean cars;
- Integrate land use, transit, and affordable housing to curb auto trips;
- Prioritize direct reductions;
- Identify air pollution, health, and social benefits of climate policies;
- Slash "super pollutants" (i.e., hydrofluorocarbons or HFCs);
- Protect and manage natural and working lands;
- Invest in disadvantaged communities; and
- Strong support for Cap-and-Trade.

The development of the Scoping Plan began by first modeling a Reference Scenario. The Reference Scenario is the forecasted statewide GHG emissions through 2030 with existing policies and programs, but without any further action to reduce GHGs. Based on the modelling results, the Scoping Plan indicates that additional effort will be needed to maintain and continue GHG reductions to meet the mid-term target (2030) and long-term (2050) target.

California Green Building Standards Code

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code or CALGreen Code. The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; (5) Environmental air quality." CALGreen contains both mandatory and voluntary measures. For nonresidential land uses, there are 39 mandatory measures including, but not limited to, exterior light pollution reduction, wastewater reduction by 20%, and commissioning of projects over 10,000 square feet.

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2022 standards encourage efficient electric heat pumps, establish electric-ready requirements for new homes, expand solar photovoltaic and battery storage standards, and strengthens ventilation standards (CEC 2024a).

Integrated Energy Policy Report

Senate Bill 138 (Bowen Chapter 568, Statues of 2002) requires the California Energy Commission to prepare a biennial integrated energy policy report that assesses major

energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public and safety (Public Resources Code Section 25301(a)).

The 2023 Integrated Energy Policy Report (IEPR) was adopted in February 2024, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2023 IEPR focuses on a variety of topics such as accelerated connection of clean energy, potential growth of hydrogen in California, and the California Energy Demand Forecast and also provides updates on gas system decarbonization, the Clean Transportation Program, and energy efficiency (CEC 2019a; CEC 2024b).

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental end energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

Clean Energy and Pollution Reduction Act of 2015

Senate Bill 350 (DeLeón, Chapter 547, Statutes of 2015) establishes targets to increase retail sales of renewable electricity to 50% by 2030 and double the energy efficiency savings in electricity and natural gas end uses by 2030.

Executive Order B-30-15

Executive Order B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, set a target of reducing GHG emissions by 40% below 1990 levels in 2030. To achieve this ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

- Increase the amount of renewable electricity provided state-wide to 50%;
- Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner;
- Reduce petroleum use in cars and trucks by up to 50%;
- Reduce emissions of short-lived climate pollutants; and
- Manage farms, rangelands, forests, and wetlands to increasingly store carbon.

Renewable Power Requirements

A major component of California's Renewable Energy Program is the Renewable Portfolio Standard (RPS) established under SBs 1078 (Sher), 107 (Simitian), and 2X (Simitian). Under the RPS, certain retail sellers of electricity are required to increase the amount of renewable energy each year by at least 1% until they reach 20% by December 31, 2010, with a final goal of 33% by 2020. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from the project because electricity production from renewable sources is generally considered "carbon neutral." For purposes of this analysis, it is assumed that the production of electricity from these renewable sources does not produce any net emissions of CO_2.

Senate Bill X1-2 (Simitian, Chapter 1, Statutes of 2011)

Governor Edmund G. Brown, Jr. signed Senate Bill (SB) X1-2 into law to codify the ambitious 33% by 2020 goal. SBX1-2 directs California Public Utilities Commission's Renewable Energy Resources Program to increase the amount of electricity generated from eligible renewable energy resources per year to an amount that equals at least 20% of the total electricity sold to retail customers in California per year by December 31, 2013, 25% by December 31, 2016, and 33% by December 31, 2020. The new RPS goals apply to all electricity retailers in the state including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. This RPS preempts the California Air Resources Board's (ARB) 33% Renewable Electricity Standard.

Senate Bill (SB) 375 (Sustainable Communities and Climate Protection Act)

In January 2009, California SB 375, known as the Sustainable Communities and Climate Protection Act, went into effect. The objective of SB 375 is to better integrate regional planning of transportation, land use, and housing to reduce sprawl and ultimately reduce GHG emissions and other air pollutants. SB 375 tasks ARB to set GHG reduction targets for each of California's 18 regional Metropolitan Planning Organizations (MPOs). Each MPO is required to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The SCS is a growth strategy in combination with transportation policies that will show how the MPO will meet its GHG reduction target. If the SCS cannot meet the reduction goal, an Alternative Planning Strategy may be adopted that meets the goal through alternative development, infrastructure, and transportation measures or policies.

In 2010, ARB released the proposed GHG reduction targets for the MPOs. The proposed reduction targets for the Kern COG region were 5% by year 2020 and 10% by year 2035

through September of 2018, then 6% by 2020 and 13% by 2035 beginning in October of 2018 (ARB 2021).

Clean Transportation Program

In accordance with AB 118 Alternative Fuels and Vehicles Technologies, the Clean Transportation Program was created by the Energy Commission. The program provides funding to public projects to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies.

Energy Conservation Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, of the California Code of Regulations [CCR], known as "Title 24") were established in 1978 in response to a legislative mandate to reduce California's energy consumption. Since that time, Title 24 has undergone several revisions. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards, referred to as "CALGreen". The California Green Building Standards Code (Title 24, proposed Part 11) was adopted as part of the California Building Standards Code (24 CCR). Part 11 which adopts certain mandatory standards for residential and nonresidential development and imposes a number of requirements on California buildings, including those with respect to planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and indoor environmental quality. The California Green Building Standards Code also contains a variety of voluntary measures, which local governments can choose to require, and which would enable buildings to qualify for special recognition. In part, the purpose of the California Green Building Code is to reduce greenhouse gas emissions from buildings.

CALGreen contains both mandatory and voluntary measures. For non-residential land uses there are 39 mandatory measures including, but not limited to exterior light pollution reduction, wastewater reduction by 20%, and commissioning (i.e., bringing into operation and ensuring quality) of projects over 10,000 square feet. Two tiers of voluntary measures apply to non-residential land uses, for a total of 36 additional elective measures.

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2019 standards, which were adopted May 9, 2018, and went into effect on January 1, 2020, improve upon existing standards, focusing on three key areas: proposing new requirements for installation of solar panels for newly constructed low-rise residential buildings; updating current ventilation and Indoor Air Quality (IAQ) requirements; and extending Title 24 Part 6 to apply to healthcare facilities. The 2019 standards also propose several smaller improvements in energy efficiency, such as lighting controls and improvements for water heating systems.

4.6.2.3 Local

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) contains some policies related to energy conservation; however, most of these apply only to residential development. The Regional Transportation Plan/Sustainable Communities Strategy, discussed below, is the local program to address renewable energy and climate change detailed in the Draft 2040 General Plan. The following policy from the Agriculture and Land Use Element addressing energy conservation applies to the proposed project.

Agriculture and Land Use Element

Section H. General and Administrative Provisions

Goal LU-H: To provide for mobile home development, home occupations, second dwellings, and planned development in appropriate locations under specified conditions and to provide for the effective and systematic implementation of the General Plan.

Policy LU-H.7: The County shall apply the following general principles to Planned Development proposals:

a. Planned Developments may include any combination of single detached or attached units.
b. District property development standards, except as related to population density, may be modified or waived where it is determined that such modification or waiver will produce a more functional, and desirable site or building environment, and no adverse impact to adjacent properties will result therefrom.
c. Population density shall be calculated on gross acreage.
d. Community sewer and water facilities shall be provided except as specified in the rural residential policies.

e. The design of a Planned Development shall insure compatibility and harmony with existing and planned uses on adjacent properties. Design elements to be considered include, but are not limited to, architecture, distance between buildings, building setbacks, building height, off-street parking, lot design and size, fencing and walls, access, circulation, signing, open space, privacy, screening, and landscaping (to include shade trees in the parking areas).
f. Off-street parking facilities shall provide parking sufficient for occupants of the development and their guests or patrons, and shall be integrated into the development and minimize adverse impacts on neighboring development.
g. Planned residential developments shall provide common open space free of buildings, streets, driveways or parking areas. The common open space shall be designed and located to be easily accessible to all the residents of the project and usable for open space and recreational uses.
h. The developer shall provide for perpetual maintenance of all common land and facilities through means acceptable to the County.
i. Conservation of natural site features, such as topography, vegetation, and water courses shall be considered in project design.
j. Energy conservation, and utilization of renewable resources should be given prominent consideration.
k. Streets serving the development must be adequate to accommodate the traffic generated by the proposed project.

Fresno Council of Governments Regional Transportation Plan/Sustainable Communities Strategy

The Regional Transportation Plan/Sustainable Communities Strategy (Fresno Council of Governments 2022) develops a regional transportation network that is environmentally sensitive and reduces GHG emissions. New transportation facilities must avoid or fully mitigate all significant impacts on environmentally sensitive areas and natural resources such as minimizing loss of farmland. Increased transportation and facility design is encouraged, along with infill development near existing public transportation, which is intended to reduce vehicle miles traveled (VMT) and the associated GHGs from those mobile emissions. This plan is not applicable to the proposed project because the proposed project does involve changes to existing transportation facilities or development of new transportation facilities.

4.6.3 Significance Criteria and Analysis Methodology

4.6.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to energy if it would:

a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.6.3.2 Analysis Methodology

Data for state and regional energy use prepared by the CEC, the proposed Surface Mining and Reclamation Plan, and Conditional Use Permit application materials were reviewed to determine the proposed project's potential impacts related to energy. Potential impacts related to energy were determined quantitatively by comparing proposed energy use to existing use of electricity, natural gas, and fuels. In determining the level of significance, this analysis assumes that the proposed project would comply with relevant state and local ordinances and regulations, as well as the general plan policy presented above.

4.6.4 Project Impacts and Mitigation Measures

Impact 4.6-1: Result in a Potentially Significant Environmental Impact Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources

The proposed project could increase the demand for electricity, natural gas, gasoline, diesel, and propane consumption in the region during Stage 1 and Stage 2 of the project. Table 4.6-3, "Existing and Proposed Energy Consumption," summarizes the proposed changes in consumption of various energy resources at the Plant Site and Quarry Site and in each of the two stages. All proposed consumption from Stage 2 would occur at the Quarry Site because the Plant Site would have been reclaimed by that time (see Section 2.2.2, "Project Stages," in Chapter 2, "Project Description," of this Draft EIR).

Table 4.6-3
Existing and Proposed Energy Consumption: Plant Site

Energy Resource	Unit of Measurement	Existing Average Consumption: Plant Site	Existing Average Consumption: Quarry Site	Existing Average Consumption: Total	Proposed Consumption: Stage 1	Proposed Consumption: Stage 2
Electricity	Hp/hour	2,125	90	**2,215**	950	3,000[1]
Natural Gas	Therms/year	0	0	**0**	900,000[1]	900,000[1]
Gasoline	Gallons/month	350	0	**350**	350	350[1]
Diesel	Gallons/month	18,000	3,000	**21,000**	33,000[2]	38,000[3]
Propane	Gallons/month	2,500	0	**2,500**	2,500[4]	2,500[4]

Table Source: Information provided by CEMEX in June and July of 2021.
Table Notes:
1. After asphalt plant is connected to natural gas pipeline.
2. The Plant Site would use on average 18,000 gallons/month for the aggregate plant, ready-mix concrete plant, and asphalt plant operations. The Quarry Site would use 15,000 after the aggregate plant is added at the start of Stage 1.
3. The Quarry Site would use 38,000 after the ready-mix concrete plant and asphalt plant are added at the start of Stage 2.
4. Before asphalt plant is connected to natural gas pipeline. After, no propane would be used.

Plant Site

As noted in Table 4.6-3, above, project activities at the Plant Site during Stage 1 would result in a decrease in electricity consumption, an increase in natural gas consumption (temporarily, until the asphalt plant is relocated to the Quarry Site), and no change to gasoline, diesel, and propane use. No energy use would occur at the Plant Site in Stage 2 because the Plant Site would have been reclaimed by that time.

Electricity

Electricity at the Plant Site is supplied by PG&E. The RPS requires that electrical service providers, such as PG&E, achieve 60% of energy provided from renewable sources by 2030. By 2045, all retail sellers must procure 100% of their retail sales from RPS-eligible resources (CPUC 2020). According to California Public Utility Commission (CPUC), in 2019 PG&E provided 31% of its energy from renewable sources (CPUC 2020). Because the Plant Site would obtain electricity from PG&E, a portion of the energy used by the project in Stage 1 would be generated from renewable sources. Proposed electricity use at the Plant Site and in Stage 1 would be reduced by more than half of existing consumption from reduced production at the aggregate plant. In addition, the Plant Site participates in PG&E's BSP, which conserves electricity. Impacts from electricity consumption at the Plant Site would be less than significant.

Natural Gas

Natural gas in the project area is supplied by PG&E; however, natural gas is not currently used at the Plant Site. The asphalt plant at the Plant Site would use approximately 900,000 therms/yr of natural gas, prior to relocation to the Quarry Site. Although natural gas consumption would occur, natural gas is necessary for the operation of the new asphalt plant. The proposed asphalt plant would replace the inactive asphalt plant that was in use at the site until 2009, with modern equipment that would maximize efficiency of natural gas consumption. Therefore, impacts from natural gas consumption at the Plant Site would be less than significant.

Gasoline

Gasoline would continue to be used by pickup trucks at the Plant Site for plant operations during Stage 1. Proposed gasoline use at the Plant Site is estimated to remain unchanged at an average of 350 gallons per month until the asphalt plant is relocated to the Quarry Site. After relocation, gasoline would be significantly reduced or eliminated at the Plant Site, depending on timing. No impacts from gasoline consumption at the Plant Site would occur. Stages 1 and 2 at the Quarry Site are discussed below.

Diesel

Diesel would continue to be used by mobile equipment at the same rate at the Plant Site during Stage 1 until the aggregate processing plant is added to the Quarry Site, at which time the Plant Site aggregate plant would reduce production by 80%, and the new asphalt plant is added to the Plant Site. The new asphalt operation, combined with the ready-mix concrete and reduced production aggregate plant would result in a proposed average monthly diesel usage of 18,000 gallons per month at the Plant Site. Therefore, no change in diesel fuel consumption at the Plant Site is proposed during Stage 1. As part of Stage 2, the ready-mix concrete plant, hot-mix asphalt plant, and diesel-powered, portable plant to recycle imported concrete and asphalt debris would be added to the Quarry Site from the Plant Site. In turn, diesel consumption that occurred at the Plant Site, as discussed above, would be transferred to the Quarry Site. Impacts from diesel consumption at the Plant Site would be less than significant.

Propane

When the existing asphalt plant is replaced by the proposed modern plant, propane may be used as fuel until natural gas is available. The proposed propane use at the Plant Site would be an estimated average of 2,500 gallons per month. When the new asphalt plant is added to the natural gas pipeline, propane use would cease. The propane consumption is necessary for operation of the new asphalt plant until natural

gas connection is provided. Therefore, impacts from propane consumption would be less than significant.

Quarry Site

As demonstrated by Table 4.6-4, above, project activities at the Quarry Site during Stages 1 and 2 would result in an increase in electricity and natural gas consumption compared to existing conditions.

Electricity

Proposed electricity use at the Quarry Site would increase compared to existing conditions as a result of the addition of the new aggregate and ready-mix plants and relocated asphalt plant. Also contributing to electricity consumption, an electric-powered, portable aggregate plant may be used before the new aggregate plant is erected at the Quarry Site (beginning of Stage 1) and during Stage 2, when the area of the proposed aggregate processing plant is mined.

However, electricity to power these facilities is necessary to achieve the project objectives. Furthermore, electricity at the Quarry Site is supplied by PG&E, which must comply with the RPS, described above. Because the Quarry Site would obtain electricity from PG&E, a portion of the energy used by the project would be generated from renewable sources, which would increase over time as the RPS goals are met. In addition, the Quarry Site participates and will continue to participate in PG&E's BSP, which conserves electricity. Therefore, the Plant Site would not waste, be inefficient with, or unnecessarily consume electricity. Impacts from electricity consumption at the Quarry Site would be less than significant.

Natural Gas

Natural gas in the project area is supplied by PG&E; however, natural gas is not currently used at the Quarry Site. Once the asphalt plant is relocated from the Plant Site to the Quarry Site and reconnected to the natural gas pipeline, it would resume using approximately 900,000 Therms of natural gas per year as it had during early Stage 1. Although natural gas consumption would occur, natural gas is necessary for the operation of the new asphalt plant and meeting project objectives. Relocation of the ready-mix concrete plant and the hot-mix asphalt plant once mining at the Plant Site is complete, rather than constructing a second plant, is an energy conservation strategy that would reduce total natural gas consumption over the life of the proposed project. The proposed asphalt plant would replace the inactive asphalt plant that was in use on the site until 2009, with modern equipment that would maximize efficiency

of natural gas consumption. Therefore, impacts from natural gas consumption at the Plant Site would be less than significant.

Gasoline

Similar to gasoline usage at the Plant Site in Stage 1, proposed gasoline use at the Quarry Site is estimated to average 350 gallons per month once the aggregate, ready-mix concrete, and asphalt plants are added in Stage 2. Because this amount of gasoline use at the Quarry Site would not occur until after gasoline use at the Plant Site has ceased, this can be considered no change compared to existing conditions when considering the project as a whole. Therefore, impacts from gasoline consumption at the Quarry Site would be less than significant.

Diesel

Monthly average diesel use at the Quarry Site during stage one would be approximately 20,000 gallons per month once the aggregate plant is added to the site, constituting an increase from baseline at the Quarry Site. As part of Stage 2, the ready-mix concrete plant, hot-mix asphalt plant, and diesel-powered, portable plant to recycle imported concrete and asphalt debris would be added to the Quarry Site from the Plant Site. In turn, diesel consumption that occurred at the Plant Site, as discussed above, would be transferred to the Quarry Site. Therefore, the proposed diesel use at the Quarry Site is estimated to be 38,000 gallons per month after the aggregate, ready-mix concrete, and asphalt plants are added to the Quarry Site, constituting no change in diesel use between Stages 1 and 2 across the two project sites. However, diesel consumption associated with the proposed project at the Quarry Site is reasonable and anticipated to be proportional on a per ton basis and is necessary for carrying out project activities. Impacts from diesel consumption at the Quarry Site would be less than significant.

Propane

Once the new asphalt plant is relocated to the Quarry Site from the Plant Site, propane may be used as fuel until natural gas is available. The proposed propane use at the Quarry Site would be an estimated average of 2,500 gallons per month until the asphalt plant is added to the natural gas pipeline, at which time propane use would cease. The propane consumption is necessary for operation of the asphalt plant until natural gas connection is provided. Therefore, impacts from propane consumption would be less than significant.

Under the proposed project, ongoing mining, processing, haul truck loading, and related activities would continue to use fuel and electricity. The new components of

operations under the proposed project would increase daily and annual energy, particularly electricity, natural gas, diesel, and propane, consumption as compared to baseline conditions, resulting in a potentially significant impact. However, any increase in electricity, fuel, or other energy consumption associated with the proposed project is reasonable and anticipated to be proportional on a per ton basis.

Although the proposed project would result in increases in consumption of electricity, natural gas, diesel, and propane, the project is expected to achieve energy efficiencies typical for mining and reclamation projects in California. Construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency, combined with local, state, and federal regulations limiting engine idling times and require recycling of construction debris, would further reduce the amount of transportation fuel demand during the life of the project. State and federal regulatory requirements addressing fuel efficiency are expected to increase fuel efficiency over time as older, less fuel-efficient vehicles are retired. The efficiency standards and light/heavy vehicle efficiency/hybridization programs contribute to increased fuel efficiency and therefore would reduce vehicle fuel energy consumption rates over time. While the proposed project would increase the consumption of gasoline and diesel proportionately with projected population and economic growth, the increase would be accommodated within the projected growth as part of the energy projections for the state and the region and would not require the construction of new regional energy production facilities.

As described in Section 4.3 and Section 4.8, the proposed project would implement the following mitigation measures that would reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal, as well as promote energy conservation resulting from recycling efforts. Therefore, the proposed project would avoid the wasteful and inefficient use of transportation fuel during operations and impacts would be less than significant with mitigation incorporated.

Level of Significance Before Mitigation: Potentially significant

Mitigation Measures: *Implement Mitigation Measures 4.3-2 and 4.8-1*

Level of Significance After Mitigation: Less than significant

Impact 4.6-2: Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency

The County of Fresno has not adopted a local plan that promotes renewable energy and energy efficiency. Therefore, the analysis assesses the project's impact on State of California energy plans.

The Scoping Plan provides the state's strategy for achieving legislated GHG reduction targets. Although the primary purpose of the Scoping Plan is to reduce GHG emissions, the strategies to achieve the GHG reduction targets rely on the use of increasing amounts of renewable fuels and energy efficiency with updates to Title 24 and the CalGreen Code. The proposed project, including implementation of all permanent structures and buildings, would comply with these regulations and would not conflict with or obstruct the Scoping Plan.

The 2019 California Energy Efficiency Action Plan addresses issues pertaining to energy efficiency in California's buildings, industrial, and agricultural sectors. The 2019 California Energy Efficiency Action Plan (2019 EE Action Plan) is the state's roadmap for an energy-efficient and low-carbon future for buildings. The California Energy Commission's (CEC) 2019 EE Action Plan charts the progress toward doubling energy efficiency savings in buildings, industry, and agriculture; achieving increased energy efficiency in existing buildings; and reducing GHG emissions from buildings. Through robust, sustainable marketplaces, California can achieve its energy and climate goals and deliver benefits to California residents. The EE Action Plan will be implemented through state programs and regulations; thus, the proposed project would not conflict with or obstruct the EE Action Plan.

State and federal regulatory requirements addressing fuel efficiency are expected to increase fuel efficiency over time as older, less fuel-efficient vehicles are retired. The efficiency standards and light/heavy vehicle efficiency/hybridization programs contribute to increased fuel efficiency and therefore would reduce vehicle fuel energy consumption rates over time. While the proposed project would increase the consumption of gasoline and diesel proportionately with projected population and economic growth, the increase would be accommodated within the projected growth as part of the energy projections for the state and the region and would not require the construction of new regional energy production facilities. The proposed project is consistent with applicable plans and policies and would not result in wasteful or inefficient use of nonrenewable energy sources; therefore, impacts would be less than significant.

Level of Significance: Less than significant

Mitigation Measure: None required

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4.7—GEOLOGY AND SOILS

This section of the Draft EIR describes the local and regional geologic, soils, seismic, and paleontological conditions that occur in the vicinity of the Quarry Site and Plan Site (collectively project sites); summarizes applicable jurisdictional laws and regulations associated with geology, soils, and paleontological resources; and presents the significance criteria and thresholds for the evaluation of potential impacts. This section then describes analysis methodologies and identifies the potential impacts related to geology, soils, and paleontological resources of the proposed project. Measures to mitigate potential impacts are recommended, as appropriate.

The information in this section is based on Applicant-prepared studies, County peer review, Applicant responses to peer review comments, and publicly available sources. The Applicant-prepared studies used are:

- *Stability Assessment Perimeter Mining Slopes*. CEMEX Rockfield Aggregate Plant Mining Expansion, Fresno, California. Prepared by Tetra Tech. September 17, 2021. (Appendix F-1, "Plant Site Geotechnical Report")
- *Geological and Geotechnical Assessment Report.* Proposed Rockfield Quarry Expansion, 3 miles North of Fresno, Fresno County, California. Prepared by Tetra Tech. April 17, 2019. (Appendix F-2, "Quarry Site Geotechnical Report")
- *Response to Peer Review Comment, Geological and Geotechnical Assessment Report*. Proposed Rockfield Quarry Expansion, 3 Miles North of Fresno, Fresno County, California. Prepared by Tetra Tech. July 28, 2021. (Appendix F-3, "Quarry Site Geotechnical Memorandum")
- *Paleontological Technical Memorandum.* Prepared by Applied EarthWorks Inc. (Applied EarthWorks). October 15, 2019. (Appendix F-4, "Paleontological Technical Memorandum")

The *Geological and Geotechnical Assessment Report* (Quarry Site Geotechnical Report) was peer reviewed by County-retained Golder in July 2020. The peer review letter report is on file with the County. In response to the peer review comments, Tetra Tech completed a *Response to Peer Review Comment, Geological and Geotechnical Assessment Report* memorandum (Quarry Site Geotechnical Memorandum), which included a revised global slope stability analysis that supersedes the analysis in the original Quarry Site Geotechnical Report. The memorandum also included the kinematic analysis, a description of groundwater monitoring requirements, and specifications for the survey and monitoring requirements to confirm slope stability during mining operations, consistent with the recommendations of the peer review. The Quarry Site Geotechnical

Memorandum (Appendix F-3) adequately addressed the peer reviewer's comments and questions.

The *Stability Assessment Perimeter Mining Slopes* (Plant Site Geotechnical Report) was peer reviewed by County-retained ENGEO in February 2024. The peer review letter report is on file with the County. In response to the peer review comments, Tetra Tech prepared a response memorandum (Plant Site Geotechnical Memorandum), which included detailed responses and additional analyses as necessary to address each comment. The Plant Site Geotechnical Report (Appendix F-1) and Plant Site Geotechnical Memorandum together adequately addressed the peer reviewer's comments and questions.

The key findings of the *Paleontological Technical Memorandum* (Paleontological Memorandum) were peer reviewed as part of the peer review of the *Cultural and Paleontological Resource Inventory for the CEMEX Rockfield Modification Project*, which is described in Section 4.5, "Cultural Resources."

4.7.1 Environmental Setting

The existing soil, seismic, and paleontological conditions at the project sites and vicinity are discussed below. Unless otherwise noted, the information presented in this subsection is based on the geotechnical evaluations (Appendices F-1 through F-3) and Paleontological Memorandum (Appendix F-4) completed for the proposed project.

4.7.1.1 Geologic Conditions

Regional Geology

The project sites are located within the southeastern portion of the Great Valley geomorphic province. A geomorphic province is a naturally defined geologic region that displays a distinct combination of features based on geology, faults, topography, and climate. Eleven geomorphic provinces are recognized in California. Great Valley geomorphic province is an alluvial plain about 40 miles wide and 400 miles long in the central part of California. Its northern part is the Sacramento Valley, drained by the Sacramento River, and its southern part is the San Joaquin Valley, drained by the San Joaquin River. The Great Valley province is essentially a trough in which sediments have been deposited almost continuously since the Jurassic Period (about 150 million years ago) (CGS 2002).

Regional and Local Topography

The existing topography immediately surrounding the project sites is generally flat within the valley of the San Joaquin River. The San Joaquin River bluffs, approximately 200-feet in height, are located to the west of the project sites across the San Joaquin River,

and river bluffs approximately 80-feet in height are located to the east across North Friant Road. Owens Mountain is located approximately 4.5 miles to the east of the project sites. Millerton Lake is located approximately 3.0 miles north of the Quarry Site.

The Plant Site is relatively flat and slopes gently to the west; surface elevations range from 300 to 320 feet above mean sea level (msl). The entire 138.5-acre Plant Site is disturbed by mining and processing operations with the exception of an approximately 4-acre area within the required 50-foot setback from North Friant Road. The Plant Site contains the Rockfield Quarry gravel mining plant that has been in operation since 1924. Approximately 98.5 acres of the Plant Site have been heavily disturbed by historic mining operations and approximately 36 acres have been developed as silt ponds that settle out silts from the wash water used by the aggregate plant and that allow water to be recycled back to the aggregate plant as wash water. Various large stockpiles and perimeter berms are also found throughout the Plant Site.

The 352.4-acre Quarry Site generally slopes to the south. Surface elevations range from approximately 250 to 330 feet msl. The majority of the Quarry Site (over 90%) has been partially disturbed by the current and historical mining operations. Undisturbed areas include the required 50-foot setback from North Friant Road and the required 200-foot setback from the San Joaquin River along the western perimeter of the Quarry Site. Screening berms are located along North Friant Road and along the southwest boundary. Vegetated topsoil stockpiles are located in various locations along the western perimeter to provide additional screening. Various internal haul roads run throughout the Quarry Site.

Project Site Lithology

The project sites are located in the San Joaquin River basin. The surficial geology of the project area and surrounding region has been mapped by Matthews and Burnett (1965) and Marchand (1976; unpublished), who provide two different interpretations of the geologic units present along the banks of the San Joaquin River. At the Plant Site, the surficial geology was further explored as part of the geotechnical field exploration (Appendix F-1). The geology of the Plant Site is shown on Figure 4.7-1, "Plant Site Geologic Conditions," which was derived from the field exploration. The geology of the Quarry Site is shown on Figure 4.7-2, "Quarry Site Geologic Conditions," which is based on Matthews and Burnett (1965) (Marchand [1976] is preliminary and unpublished and therefore was not used).

Based on the geologic maps, the San Joaquin River basin includes a cover of recent, Holocene-age (the current geological epoch, lasting from the present to 11,700 years before the present) and late Pleistocene-age (11,700 years to 129,000 years before the

present) alluvial sediments which are in turn underlain by Mesozoic-age (66 to 252 million years before the present) plutonic rocks which are the main target of the Quarry Site expansion. Plutonic rocks are igneous rocks that solidified from a melt at great depths. The rocks have been classified principally as granite and granodiorite (Matthews and Burnett 1965). In addition to being underlain by granite and granodiorite, the geotechnical investigation of the Plant Site also found that portions of the site are underline by bedrock consisting of tuff, which is a rock made of volcanic ash that lithified into a solid rock (Appendix F-1).

With regard to the surficial conditions on the Plant Site, due to the historic mining, the majority of the surface of the Plant Site is covered by undocumented artificial fill to depths of between 10 and 25 feet below the ground surface (bgs) (shown on Figure 4.7-1). Wash deposits consisting of mining-related wash materials deposited in silt ponds are located at three locations within the Plant Site at the northeast, southeast, and westerly limits (shown on Figure 4.7-1). The materials consist of silt, silty-sandy clay, and clay that reach depths of about 20 to 30 feet bgs and are saturated at depths of 10 to 15 feet bgs.

Due to its relevance to paleontological resources, a more detailed discussion of the existing lithology of the project sites is presented below in Section 4.7.1.4, "Paleontological Resources."

Project Site Hydrogeology

Hydrogeology is primarily addressed in Section 4.10, "Hydrology and Water Quality," of this Draft EIR. The following discussion is a brief overview of hydrogeologic conditions at the project sites. The project sites are underlain by the Kings Basin, which is a subbasin of the San Joaquin Valley groundwater basin. The Kings Basin is an alluvial basin bounded north and south by the San Joaquin and Kings Rivers, respectively, by the Sierra Nevada mountains on the northeast, and the Westside and Delta-Mendota subbasins to the west-southwest. The primary groundwater aquifer units occur within alluvial (river) deposits of sand and gravel within the San Joaquin Valley to the west and southwest of the project sites. However, groundwater also occurs sporadically within fractured granitic bedrock.

The depth to groundwater at the Plant Site varies from about 10 ft bgs to 30 ft bgs (Appendix G-3, "Groundwater Conditions at the Plant Site"). Groundwater flow within the alluvium is oriented toward the southwest, based on groundwater contour maps presented in the Plant Site Groundwater Conditions Report (see Figure 6 in Appendix G-3).

SOURCE: Tetra Tech, 2021a; arranged by Benchmark Resources in 2022

Plant Site Geologic Conditions
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.7-1

BENCHMARK RESOURCES

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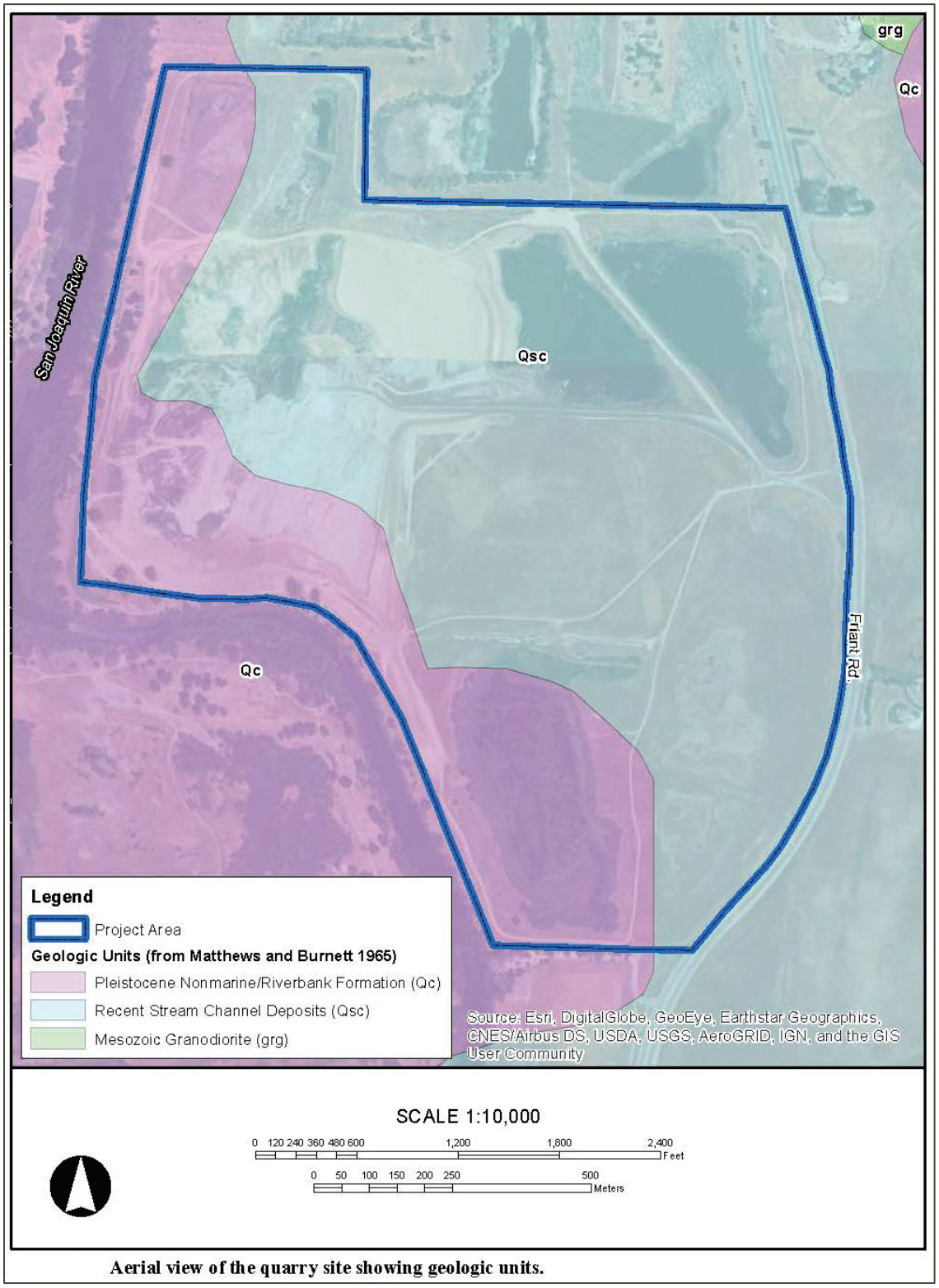

Aerial view of the quarry site showing geologic units.

SOURCE: Applied Earthworks 2019; arranged by Benchmark Resources in 2022

Quarry Site Geologic Conditions
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.7-2

BENCHMARK RESOURCES

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The depth to groundwater across the Quarry Site varies from about 15 ft bgs to 40 ft bgs (Appendix G-4, "Groundwater Conditions at the Quarry Site"). Groundwater flow within the alluvium and the weathered rock is oriented toward the south or southeast, based on groundwater contour maps presented in Appendix G-4 (see Figures 5 through 8 in Appendix G-4). Within the hard rock, groundwater flow is generally toward the south-southwest but shows a local depression in the center of the Quarry Site, possibly due to on-going dewatering of the mining excavation (see Figure 9 in Appendix G-4).

4.7.1.2 Soils, Geologic, and Seismic Hazards

Surface Fault Rupture and Seismic Hazards

The project sites are not located within a state-designated Alquist-Priolo Earthquake Fault Zone (California Geological Survey 2021). There are no surface traces of any active or potentially active faults that pass directly through or in the vicinity of either the Plant Site or Quarry Site (shown on Figure 4 of Appendix F-1 and Figure 4 of Appendix F-2). An active fault is defined by the State of California has having surface displacement within the past 11,000 years. The nearest active faults to the project sites are the Great Valley fault (Segment 13), located about 54 miles southwest of the project sites; the Great Valley fault (Segment 14), located about 61 miles southwest of the project sites; the Ortigalita fault zone, located about 65 miles west of the project sites; the Southern Sierra Nevada fault zone, located about 75 miles southeast of the project sites; and the San Andreas fault, located about 78 miles southwest of the project sites (USGS and CGS 2021).

At a regional level, Fresno County is at a high hazard earthquake level, which means that there is more than a 20% chance of a potentially damaging earthquake shaking in the project area within the next 50-years (ThinkHazard! 2024). However, based on the distance between the project sites and the nearest active faults, the potential for ground shaking in the southeast Great Valley province, where the project sites are located, is low (Branum et al. 2016).

Liquefaction and Lateral Spreading

Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur. Because saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths. The potential for liquefaction-induced ground failure (e.g., loss of bearing strength, ground fissures, and sand boils) depends on the thickness of the liquefiable soil layer relative to the thickness of the overlying non-liquefiable material.

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other "free" face, such as an excavation boundary. In a lateral spread failure, a layer of ground at the surface is carried on an underlying layer of liquefied material over a nearly flat surface toward a river channel or other bank. The lateral spreading hazard tends to mirror the liquefaction hazard for a site, assuming a free face is located nearby.

The *Fresno County Multi-Jurisdictional Hazard Mitigation Plan* (Hazard Mitigation Plan) indicates that the ground acceleration must approach 0.3g[1] before liquefaction occurs in a sandy soil with relative densities typical of the San Joaquin alluvial deposits. Areas subject to 0.3g acceleration or greater are located in eastern and western Fresno County, within a small section of the Sierra Nevada along the Fresno-Inyo border and along the Coast Range foothills, respectively. It is unlikely that areas along the valley floor where the project sites are located would be subject to 0.3g acceleration or greater. The Hazard Mitigation Plan notes that detailed geotechnical engineering investigation are necessary to accurately evaluate liquefaction potential in these areas (Fresno County 2018a).

The Plant Site Geotechnical Investigation (Appendix F-1) indicates that the saturated alluvial soils on the site are poorly graded sands and gravels that are dense to very dense. These soils are not considered susceptible to liquefaction. The undocumented fill that overlies the alluvial soils is generally located above the groundwater level and consequently not susceptible to liquefaction. The silt pond wash deposits consist of silt, silty-sandy clay, and clay that reach depths of about 20 to 30 feet bgs and are saturated at depths of 10 to 15 feet bgs. These soils are liquefiable. However, due to the relatively low potential for seismic ground shaking to occur in the area, the potential for liquefaction and lateral spreading is still considered low.

The Quarry Site Geotechnical Investigation (Appendix F-2) indicates that the native surficial soils which border the perimeter of the Quarry Site are poorly graded, poorly graded gravel, and silty sand. The upper several feet to tens of feet of the in-place weathered bedrock is classified as clayey sand and sandy silt with an estimated percentage of fines (passing the #200 sieve) of about 5% to about 30% (clay and silt lens materials are greater than 50%). These soils are liquefiable. However, due to the relatively low potential for seismic ground shaking to occur in the area, the potential for liquefaction and lateral spreading is still considered low.

[1] A ground acceleration of 0.3g refers to an earthquake ground motion where the acceleration reaches 30% of the force of gravity, considered a relatively strong earthquake.

Seismically Induced Settlement

Seismically induced settlement occurs when loose sandy soils become denser when subjected to shaking during an earthquake. Settlement of sufficient magnitude to cause significant structural damage is normally associated with rapidly deposited alluvial soils or improperly founded or poorly compacted fill. Due to the presence of sandy soils at the Plant Site and Quarry Site, it is possible that seismically induced settlement could occur on these sites.

Subsidence

Subsidence is the lowering of the land-surface elevation. The mechanism for subsidence is generally related to groundwater pumping and subsequent consolidation of loose aquifer sediments. The primary hazards associated with subsidence are increased flooding hazards and damage to underground utilities as well as above-ground structures. Other effects of subsidence include changes in the gradients of stormwater and sanitary sewer drainage systems for which the flow is gravity driven. Below the groundwater level, the subsurface soils at the Plant Site and Quarry Site generally consist of dense to very dense alluvial sands and gravels underlain by sedimentary and/or granitic rock, which have low potential for subsidence.

Landslides

Slope failure can occur as either rapid movement of large masses of soil (landslide) or slow, continuous movement (creep) on slopes of varying steepness. Areas susceptible to landslides are characterized by steep slopes and downslope creep of surface materials.

The *Fresno County General Plan Background Report* (Background Report) indicates that landslide hazard areas in Fresno County consist primarily of foothill and mountain areas where fractured and steep slopes are present (i.e., the Sierra Nevada in eastern Fresno County), areas where less consolidated or weathered soils overlie bedrock (e.g., the Coast Range in western Fresno County), and areas where inadequate ground cover accelerates erosion (e.g., along the San Joaquin River) (Fresno County 2000a). The Background Report concludes that there is no risk of large landslides in the valley area of the County due to its relatively flat topography. However, there is the potential for small slides and slumping along the steep banks of rivers and creeks (Fresno County 2000a). The Hazard Mitigation Plan similarly concludes that localized minor landslides are likely to continue to occur in Fresno County when heavy precipitation occurs, as they have in the past (Fresno County 2018a).

The project sites are located in the valley area of the County with the San Joaquin River bluffs, approximately 200-feet in height, located to the west across the San Joaquin River,

and river bluffs, approximately 80-feet in height, located to the east across North Friant Road. It is possible a small slide could occur along these bluffs.

Expansive Soils

Expansion and contraction of soil volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. Shrink-swell potential is influenced by the amount and type of clay minerals present and can be measured by the percent change of the soil volume. Shrink-swell potential is also influenced by the location of the soils; soils below the groundwater table maintain a steady moisture content and would therefore not be subject to shrink-swell effects. The USDA Natural Resources Conservation Service (NRCS) (2021) Web Soil Survey description of physical soil properties indicates that the soils on the Plant Site and Quarry Site have low shrink-swell potential.

4.7.1.3 Paleontological Resources

Paleontological resources include fossilized remains or traces of organisms, including plants, vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and marine coral), and microscopic plants and animals (microfossils), including their imprints, from a previous geological period. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 years) (Society of Vertebrate Paleontology 2010). The igneous rocks underlying the alluvial sediments at the majority of the Plant Site and the entire Quarry Site are formed from the solidification of molten rock material and therefore do not have the potential to contain paleontological resources. The tuff that that underlies portions of the Plant Site is formed from the solidification of volcanic ash. Tuff could contain fossilized remains.

With regards to the alluvial sediments located above the bedrock at the project sites, the Paleontological Memorandum (Appendix F-4) indicates that much of the ground surface in the project sites consists of younger Quaternary alluvium (the Quaternary period covers that last 2.6 million years up to the present day) derived as overbank deposits from the San Joaquin River to the west, which is unlikely to yield significant vertebrate fossils. At the Plant Site, the younger Quaternary alluvium is overlain by undocumented artificial fill and silt pond wash deposits, which are also unlikely to yield significant vertebrate fossils. However, older Quaternary deposits at depth may be fossiliferous, and these deposits may be present on both the Plant Site and Quarry Site. More detailed geologic mapping information is presented in Table 4.7-1, "Geologic Units within the Plant Site and Quarry Site."

Table 4.7-1
Geologic Units Within the Plant Site and Quarry Site

Location	Matthews and Burnett (1965) Geologic Map Formations[1]	Marchand (1976) Geologic Map Formations[1]
Inside Plant Site	Pleistocene-age nonmarine deposits (Qc) (i.e., "Riverbank Formation")[2] are exposed at the eastern edge of the Plant Site. Recent alluvium (Qsc) covers the remainder of the Plant Site.[3] The recent alluvium (Qsc) deposits on the Plant Site are currently overlain by undocumented artificial fill (Qaf) and silt pond wash deposits (Qaf_{sp}).[5]	Recent Holocene-age alluvium (hal) covers the northern and southwestern portions of the Plant Site.[3] The remainder of the Plant Site is covered the Late Pleistocene-age upper member of the Modesto Formation (m2).[4]
Outside Plant Site	Exposures of the older and fossiliferous nonmarine Early Pleistocene "Turlock Lake Formation" and Pliocene-Holocene "Tulare Formations" are mapped as "Qp" outside of, but within 600 feet of, the east boundary of the Plant Site.	No significant features noted.
Inside Quarry Site	Pleistocene-age nonmarine deposits (Qc) (i.e., "Riverbank Formation")[2] – exposed at the western margin of Quarry Site. Recent alluvium (Qsc) covers the remainder of the Quarry Site.[3]	Recent alluvium (hal) covers the western margin of the Quarry Site.[3] The remainder of the Quarry Site is covered the Late Pleistocene-age upper member of the Modesto Formation (m2).[4]
Outside Quarry Site	An exposure of much older (Mesozoic) basement and non-fossiliferous granodiorite is mapped as "grg" outside of, but within 1,200 feet of, the northeast tip of the Quarry Site.	No significant features noted.

Table Source: Matthews and Burnett 1965; Marchand 1976; Tetra Tech 2021a.
Table Notes:

1. Mesozoic granite or granodiorite (grg) is assumed to underlie all of the surface formations, with the exception of portions of the Plant Site underlain by tuff (Tc).
2. Riverbank Formation (Qc) = The Pleistocene nonmarine deposits that consist of older alluvium and dissected fan deposits of granitic sand, silt, and clay.
3. Recent alluvium (Qsc or hal) = Holocene-age alluvium that consists of alluvial sand, silt, and gravel from recent floodplains and low terraces.
4. Upper member of the Modesto Formation (m2) = Late Pleistocene-age deposits that consist of alluvial sand, silt, and gravel from channels, terraces, and upper fans.
5. This information is based on the field exploration documented in the Plant Site Geotechnical Report (Appendix F-1).

As shown in Table 4.7-1, Marchand's (1976) interpretation differs from Matthews and Burnett (1965) in a few ways. The coverage of Holocene-age alluvium between the two maps is somewhat reversed—Marchand's (1976) alluvium covers the approximate extent of Matthews and Burnett's (1965) Riverbank Formation. Marchand (1976) does not include the Riverbank Formation within the project area, while Matthews and Burnett (1965) do not include the Modesto Formation. Nevertheless, the Modesto and Riverbank formations are both known to be fossiliferous, and the Paleontological Memorandum notes that hundreds of fossil plant and vertebrate localities have been reported throughout the San Joaquin Valley. In contrast, Holocene-age alluvial deposits mapped at the surface of the project area are generally too young to contain fossilized material (Society of Vertebrate Paleontology 2010). While these alluvial deposits do not typically yield significant and intact fossil material, they may shallowly overlie the Modesto and Riverbank formations.

4.7.2 Regulatory Setting

4.7.2.1 Federal

Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction Program (NEHRP) was established by the U.S. Congress when it passed the Earthquake Hazards Reduction Act of 1977, Public Law 95–124. In establishing NEHRP, Congress recognized that earthquake-related losses could be reduced through improved design and construction methods and practices, land use controls and redevelopment, prediction techniques and early-warning systems, coordinated emergency preparedness plans, and public education and involvement programs. The four basic NEHRP goals are:

- Develop effective practices and policies for earthquake loss reduction and accelerate their implementation.
- Improve techniques for reducing earthquake vulnerabilities of facilities and systems.
- Improve earthquake hazards identification and risk assessment methods, and their use.
- Improve the understanding of earthquakes and their effects.

Implementation of NEHRP priorities is accomplished primarily through original research, publications, and recommendations to assist and guide state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

4.7.2.2 State

Alquist-Priolo Earthquake Fault Zoning Act

The project sites are not located within a state-designated Alquist-Priolo Earthquake Fault Zone (California Geological Survey 2021). The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Alquist-Priolo Act) was passed to mitigate the hazards associated with surface faulting in California. Administered by the California Department of Conservation (DOC), the Alquist-Priolo Act prevents construction of buildings used for human occupancy on the surface traces of active faults. Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code [PRC], Section 2690-2699.6) directs the DOC California Geologic Survey to identify and map areas prone to liquefaction, earthquake-induced landslides and amplified ground shaking. The purpose of the Seismic Hazards Mapping Act is to minimize loss of life and property through the identification, evaluation and mitigation of seismic hazards. The Seismic Hazards Mapping Act was passed by the legislature following the 1989 Loma Prieta earthquake. As a result, CGS geologists gather existing geological, geophysical, and geotechnical data from numerous sources to produce the Seismic Hazard Zone Maps. They integrate and interpret this data regionally in order to evaluate the severity of the seismic hazards and designate areas prone to ground rupture, liquefaction, and earthquake–induced landslides as Zones of Required Investigation. Cities and counties are then required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes. The Seismic Hazards Mapping Act requires site-specific geotechnical investigations be conducted within Zones of Required Investigation to identify and evaluate seismic hazards and formulate mitigation measures prior to permitting most developments designed for human occupancy. The California Geologic Survey has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, ground rupture, and landslides (primarily the Bay Area and the Los Angeles basin). The project sites are not located in these areas.

California Building Standards Code

The 2022 California Building Standards Code covers grading and other geotechnical issues, building specifications, and non-building structures. The Chapter 15.08, Building Code, of the Fresno County Ordinance Code adopts and amends the most current state building codes. The Fresno County Building and Safety Team is responsible for reviewing plans, issuing building permits, and conducting field inspections.

The California Building Code requires that a site-specific geotechnical investigation report be prepared by a licensed professional for proposed developments of one or more buildings greater than 4,000 square feet to evaluate geologic and seismic hazards. Buildings less than or equal to 4,000 square feet also are required to prepare a geologic engineering report, except for one-story, wood-frame and light-steel-frame buildings that are located outside of the Alquist-Priolo Earthquake Faults Zones. The purpose of the geotechnical investigation is to identify seismic and geologic conditions that require project mitigation, such as ground shaking, liquefaction, differential settlement, and expansive soils. Based on the conditions of the site, the building code requires specific design parameters to ensure construction of buildings that will resist collapse during an earthquake. These design parameters do not protect buildings from all earthquake shaking hazards but have been developed to reduce hazards to a manageable level. Requirements for the geotechnical investigation are presented in Chapter 16 "Structural Design" and Chapter 18 "Soils and Foundations" of the 2020 California Building Code. Geotechnical Investigation reports for the proposed project facilities would be reviewed by the County prior to issuance of building permits.

Surface Mining and Reclamation Act

Mineral Resource Zones

California's Surface Mining and Reclamation Act of 1975 (SMARA) requires the State Geologist to classify land into Mineral Resource Zones (MRZs) based on the known or inferred mineral resource potential of that land. The process is based solely on geology, without regard to existing land use or land ownership. The primary goal of mineral land classification is to help ensure that the mineral resource potential of lands is recognized and considered in the land-use planning process.

In 1988 and 1999, the State of California included the Quarry Site and a small portion of the Plant Site in the classification of the aggregate resources in San Joaquin River area as MRZ-2 (areas where a high likelihood exists that significant aggregate deposits are present) (DOC Division of Mines and Geology 1988a and 1999). Fresno County incorporated the MRZ-2 classification into the Mineral Resources Unit of the Open Space/Conservation Element of the General Plan in 1987. Also in 1988, the state included both the Quarry Site and a small portion of the Plant Site as part of the lands designated as having construction grade aggregate deposits that are of regional significance (California DOC Division of Mines and Geology 1988b).

The State of California classified the majority of the Plant Site as MRZ-1 (areas where adequate information indicates no significant mineral resources are present) (California Department of Conservation, Division of Mines and Geology 1988a and

1999). However, as described in the project's Surface Mining and Reclamation Plan (SMRP), Applicant borings of the Plant Site indicate that, although much of the site has been mined and backfilled to depths of between 5 and 32 feet bgs, there are recoverable sand and gravel resources to a depth of about 85 feet bgs.

Slope Stability

SMARA is flexible with respect to addressing geotechnical slope stability for final reclamation slopes. SMARA does not specify a minimum factor of safety for slope stability. However, CCR Section 3502(b)(3) indicates that final reclaimed slopes shall be flatter than the critical gradient, which implies that static factors of safety should be greater than 1.0. The section further states:

> Whenever final slopes approach the critical gradient for the type of material involved, regulatory agencies shall require an engineering analysis of the slope stability. Special emphasis on slope stability and design shall be necessary when public safety or adjacent property may be affected.

CCR Section 3502(b)(4) states that:

> Areas mined to produce additional materials for backfilling and grading, as well as settlement of filled areas, shall be considered in the reclamation plan. Where ultimate site uses include roads, building sites, or other improvements sensitive to settlement, the reclamation plans shall include compaction of the fill materials in conformance with good engineering practice.

CCR Section 3704(d) states that:

> Final reclaimed fill slopes, including permanent piles or dumps of mine waste rock and overburden, shall not exceed 2:1 (horizontal:vertical), except when site-specific geologic and engineering analysis demonstrate that the proposed final slope will have a minimum slope stability factor of safety that is suitable for the proposed end use, and when the proposed final slope can be successfully revegetated.

CCR Section 3704(f) states that:

> Cut slopes, including final highwalls and quarry faces, shall have a minimum slope stability factor of safety that is suitable for the proposed end use and conform with the surrounding topography and/or approved end use.

Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy)

On June 19, 2012, the State Water Resources Control Board adopted the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy) (Resolution No. 2012-0032). The OWTS Policy authorizes a qualified local agency to implement the Local Area Management Program that is the standard by which authorized local agencies regulate on-site wastewater treatment systems. The Local Area Management Program must be approved by the appropriate regional board.

California Public Resources Code

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under state laws and regulations. Public Resources Code, Chapter 1.7, Sections 5097.5 and 30244 regulate removal of paleontological resources from state lands, define unauthorized removal of fossil resources as a misdemeanor, and require mitigation of disturbed sites. Professional standards of practice, such as those adopted by the Society of Vertebrate Paleontology (2010), offer additional guidance for the control and remediation of adverse effects on significant paleontological resources.

4.7.2.3 Local

Fresno County Local Area Management Program

The Fresno County Public Works and Planning Department is the regulatory agency that oversees and issues permits for the design, installation, and operation of on-site wastewater treatment systems. An on-site wastewater treatment system may consist of tanks, treatment and dispersal components, and dispersal fields which are used to convey, treat, store, or dispose of potentially harmful wastewater when those wastewaters are not directly and immediately disposed of in a public sanitary sewer.

The Fresno County Local Area Management Program was developed in accordance with the OWTS Policy and approved by the Central Valley Regional Water Quality Control Board on April 6, 2017 (Resolution R5-2017-0033). The Local Area Management Program is codified in Chapter 15.20, Plumbing Code, of the Fresno County Ordinance Code, and describes the requirements for siting, design, and construction of on-site wastewater treatment systems in the County (Fresno County 2019).

This Onsite Wastewater Treatment System Guidance Manual provides the procedural and technical details for implementation of the provisions of the Local Area Management Program. The provisions within the Onsite Wastewater Treatment System Guidance

Manual are designed to protect public health, groundwater and surface water bodies from degradation and provide safely operating on-site wastewater treatment systems through proper design, siting, installation, maintenance and monitoring (Fresno County 2018b).

Fresno County Ordinance Code

Chapter 15.28, Grading and Excavation, of the Fresno County Ordinance Code, amended February 28, 2023, stipulates safety and environmental control measures for construction practices. The ordinance sets forth rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments. The ordinance also establishes the administrative procedure for issuance of permits and provides for approval of plans and inspection of grading construction. All grading activities are required to be permitted by the County's building official except for those indicated in the ordinance. The ordinance also sets forth other requirements that must be met before any permit is issued. The County requires erosion control measures and inspections to be made by the building official.

Zoning Ordinance of Fresno County—Land Use and Planning

The Zoning Ordinance of Fresno County—Land Use and Planning, last amended June 2018, has policies and ordinances related to geology and soils. Specifically, Section 858, "Regulations for Surface Mining and Reclamation in All Districts," contains the following countywide development standards:

Section 858—Regulations for Surface Mining and Reclamation in All Districts

H. Mining and Reclamation Standards

13. Grading and revegetation shall be designed to minimize erosion and to convey surface runoff to natural drainage courses or interior basins designed for water storage. Basins that will store water during periods of surface runoff shall be designed to prevent erosion of spillways when these basins have outlet to lower ground.

14. Stockpiles of overburden and minerals shall be managed to minimize water and wind erosion.

15. Erosion control facilities such as settling basins, ditches, stream bank stabilization, and dikes shall be constructed and maintained where necessary to control erosion.

25. The Department shall consider the potentially adverse environmental effects of surface mining operations and will generally require that:

a. Disturbances of vegetation and overburden in advance of mining activities be minimized.

b. Sufficient topsoil be saved to perform site reclamation in accordance with the Mining and Reclamation Plan.

26. Reclamation of mined lands shall be implemented in conformance with applicable performance standards as set forth in the State Regulations Sections 3703 et seq. pertaining to the subjects listed below:

b. Backfilling, regrading, slope stability, and recontouring.

c. Revegetation.

d. Drainage, diversion structures, waterways, and erosion control.

h. Topsoil salvage, maintenance, and redistribution

Surface mining operators are required to forward an annual surface mining report to the DOC and to the County Department of Public Works and Development Services. The County is required to conduct or cause an inspection of the surface mining operation within six months of receipt of the operator's annual report to determine whether the surface mining operation is in compliance with the approved conditional use permit, approved mining and reclamation plan, approved financial assurances, and state regulations pertaining to mining. The County must submit the completed inspection form to the DOC within 30 days along with statements on compliance with SMARA, any inconsistencies with SMARA, and any pending action on the mine and reclamation plan, amendments, or financial assurances.

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2000b) Public Facilities & Services Element, Health and Safety Element, and Open Space & Conservation Element include the following policies that apply to the proposed project:

Public Facilities & Services Element

Section C. Water Supply and Delivery

Goal PF-D: To ensure adequate wastewater collection and treatment and the safe disposal of wastewater.

Policy PF-D.6: The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that permit installation of such disposal facilities without threatening surface or

groundwater quality or posing any other health hazards and where community sewer service is not available and cannot be provided.

Health and Safety Element

Section D. Seismic and Geologic Hazards

Goal HS-D: To minimize the loss of life, injury, and property damage due to seismic and geologic hazards.

Policy HS-D.3: The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development, including public infrastructure projects, in areas prone to geologic or seismic hazards (i.e., fault rupture, groundshaking, lateral spreading, lurch cracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).

Policy HS-D.4: The County shall require all proposed structures, additions to structures, utilities, or public facilities situation within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with applicable provisions of the California Building Code (Title 24 of the California Code of Regulations) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk to public safety.

Policy HS-D.6: The County shall ensure compliance with State seismic and building standards in the evaluation, design, and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous material manufacture and storage facilities, bridges, large public assembly halls, and other structures subject to special seismic safety design requirements.

Policy HS-D.7: The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects, that requires a County permit and is located in an area containing soils with high "expansive" or "shrink-swell" properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.

Policy HS-D.8: The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate

construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.

Policy HS-D.10: The County shall not approve a County permit for new development, including public infrastructure projects where slopes are over thirty (30) percent unless it can be demonstrated by a California-registered civil engineer or engineering geologist that hazards to public safety will be reduced to acceptable levels.

Policy HS-D.11: In known or potential landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems, undercutting the bases of slopes, removal of vegetative cover, and steepening of slopes.

Open Space & Conservation Element

Section J. Historical, Cultural, and Geological Resources

Goal OS-J: To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County's historically significant resources in order to promote historical awareness, community identity, and to recognize the County's valued assets that have contributed to past county events, trends, styles of architecture, and economy.

Policy OS-J.4: The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, tribal, paleontological, and cultural sites and resources. For projects requiring ground disturbance and located within a high or moderate cultural sensitivity area, a cultural resources technical report may be warranted, including accurate archival research and site surveys conducted by a qualified cultural resources practitioners. The need to prepare such studies shall be determined based on the tribal consultation process and initial outreach to local or state information centers.

4.7.3 Significance Thresholds and Analysis Methodology

4.7.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to geology and soils if it would:

a) directly or indirectly cause potential substantial adverse effects, involving the risk of loss, injury, or death involving;
   - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map issued by the State Geologist for the area or based on other substantial evidence of known fault (Refer to Division of Mines and Geology Special Publication 42),
   - strong seismic ground shaking,
   - seismic-related ground failure, including liquefaction, or
   - landslides;

b) result in substantial soil erosion or the loss of topsoil;

c) be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;

d) be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to the life or property; or

e) have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

4.7.3.2 Analysis Methodology

Plant Site Geotechnical Investigation

The Plant Site Geotechnical Investigation consisted of the following tasks:

- A review of available background data, including in-house and web-based geotechnical literature, geologic literature and maps, and seismic hazard maps.
- A review of site-specific exploration and laboratory testing data provided by the applicant.
- A subsurface evaluation, including the excavating, logging, and sampling of four exploratory hollow-stem auger borings drilled to depths varying from about 75 to 105 feet (shown on Figure 4.7-1).
- Laboratory testing of selected samples recovered from the borings to evaluate classification and geotechnical engineering properties of the on-site soils.

- Engineering evaluation of the collected geotechnical data to develop geotechnical conclusions. This work included the following items:
  - An evaluation of general subsurface conditions and description of types, distribution, and engineering characteristics of subsurface earth materials.
  - Development of a generalized cross-section for slope stability analyses.
  - Performance of stability analyses for temporary perimeter mining slopes. The minimum required factors of safety selected for the analysis were 1.3 for the static condition and 1.0 for the pseudo-static (seismic) condition. These factors were selected considering the non-critical nature of the slopes without appreciable potential of impacting permanent onsite or adjacent structures or facilities. The slopes were conservatively assumed to be saturated and no water was assumed within the excavation.

Detailed methodology for each of these tasks is provided in Appendix F-1.

Quarry Site Geotechnical Investigations

The Quarry Site Geotechnical Investigation consisted of the following tasks:

- Core logging of seven on-site borings (locations shown on Figure 2 of Appendix F-2).
- Performance of geophysical surveys on four deep borings drilled by Kenneth D. Schmidt & Associates (Appendix G-4).
- Geologic and geotechnical engineering evaluation of the collected geotechnical data to evaluate the site geologic hazards and the design of the proposed mining slopes, including the following items:
  - An evaluation of general subsurface conditions and description of types, distribution, and engineering characteristics of subsurface materials.
  - Determination of site seismic demand.
  - Preparation of four representative geotechnical cross-sections for slope stability analyses.
  - Global stability analyses of proposed quarry slopes under static and seismic conditions. The minimum required factors of safety selected for the analysis were 1.5 for the static condition and 1.1 for the pseudo-static (seismic) condition. These factors were selected considering the nature of the slopes with appreciable potential of impacting permanent onsite or adjacent structures or facilities.

- Preparation of this report, including the provision of reference maps and illustrations, a summary of the collected data and geotechnical conclusions for the proposed project.

The Quarry Site Geotechnical Memorandum was developed in response to peer review comments of the original Quarry Site Geotechnical Report. It included a revised global slope stability analysis that supersedes the analysis in the original Quarry Site Geotechnical Report. The memorandum also included a kinematic analysis, a description of groundwater monitoring requirements, and specifications for the survey and monitoring requirements to confirm slope stability during mining operations, consistent with the recommendations of the peer review.

Detailed methodology for all of these tasks is provided in Appendices F-2 and F-3.

Paleontological Analysis

Most professional paleontologists in California adhere to the guidelines set forth by the Society of Vertebrate Paleontology (2010) to determine the course of paleontological mitigation for a given project on private- and state-owned lands, unless city-, county-, or state-specific guidelines are available. The guidelines establish detailed protocols for the assessment of the paleontological sensitivity of a project area and outline measures to follow in order to mitigate adverse impacts to known or unknown fossil resources during project development.

Following the Society of Vertebrate Paleontology's established process, baseline information is used to assign the paleontological sensitivity of a geologic unit(s) (or members thereof) to one of four categories—No Potential, Undetermined, Low, and High. Geologic units are considered to be "sensitive" for paleontological resources and have a High Potential if vertebrate or significant invertebrate, plant, or trace fossils have been recovered anywhere in their extent, even if outside the project area; or if the units are sedimentary rocks that are temporally or lithologically suitable for the preservation of significant fossils. Significant fossils are those that contribute new and useful taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data (Society of Vertebrate Paleontology 2010).

The Paleontological Memorandum (Appendix F-2) assessed the paleontological sensitivity of geologic units exposed at the ground surface and thought to be in the project area. As part of the evaluation, Applied EarthWorks reviewed published and unpublished geological maps, paleontological literature, and museum records. Both Marchand's (1976) geologic map and Matthews and Burnett (1965) geologic maps were considered in the sensitivity evaluation. In regard to museum records, Applied

EarthWorks searched the online database of the University of California Museum of Paleontology (UC Museum of Paleontology) and utilized Natural History Museum of Los Angeles County (Natural History Museum of LA County) reports dated September 1, 2017, and June 28, 2019, to identify vertebrate fossil localities in the project area. The latter Natural History Museum of LA County report covers the project area plus a 0.5-mile-wide buffer. Only Natural History Museum of LA County vertebrate paleontology records were searched, rather than all the museum's paleontology collections, because geologic units near the project area are more conducive to the preservation of vertebrate fossils than significant invertebrate, plant, or trace fossils. The results of both records searches as well as the other desktop studies are discussed in greater detail the Cultural and Paleontological Inventory (Appendix F-1).

The UC Museum of Paleontology online paleontological database includes a few prolific fossil localities in Fresno County (UC Museum of Paleontology 2019, cited in Appendix F-2). Of these, the nearest specified locality is 25 miles southwest of the project area near the community of Tranquility. Over 100 specimens of the following fossil vertebrates are reported from Late Pleistocene-age deposits: ray-finned bony fish (Teleostei); reptiles (Reptilia), including snakes (Ophidia), rattlesnake (*Crotalus*), and pond turtle (*Actinemys*); birds (Aves), including loon (*Gavia*); and various mammals (Mammalia), such as vole (*Microtus*), gopher (*Thomomys*), hare (*Lepus*), mole (*Scapanus*), badger (*Taxidea*), fox (*Urocyon*, *Vulpes*), wolf (*Canis*), deer (*Cervus*, *Odocoileus*), bison (*Bison*), and horse (*Equus*). An unspecified locality from the Modesto Formation within Fresno County yielded specimens of mammoth (*Mammuthus*).

No known fossil localities in the project area from the Natural History Museum of LA County vertebrate collections (McLeod 2017, 2019, cited in Appendix F-2). The closest Natural History Museum of LA County locality on record (LACM 7254) occurs in older Quaternary deposits 30 miles northwest of the project area and immediately northeast of Chowchilla.

4.7.4 Project Impacts and Mitigation Measures

Impact 4.7-1: Exposure of People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death, as a Result of Rupture of a Known Fault

The project sites are not located within a state-designated Alquist-Priolo Earthquake Fault Zone (California Geological Survey 2021). The Plant Site and Quarry Site Geotechnical Reports confirm that there are no surface traces of any active or potentially active faults that pass directly through or in the vicinity of either the Plant Site or Quarry

Site. Therefore, the proposed project does not have the potential to expose people or structures to adverse effects as a result of rupture of a known fault.

Level of Significance: No Impact.

Mitigation Measures: None required.

Impact 4.7-2: Exposure of People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death, as a Result of Strong Seismic Ground Shaking or as a Result of Seismically Induced Liquefaction, Lateral Spreading, or Settlement

Seismic events, such as earthquakes, cause ground shaking which can damage structures. Earthquake intensities vary throughout the state, depending upon the magnitude of the earthquake, the distance from the causative fault, and the type of geologic material underlying a given location. In most of California, ground shaking caused by earthquakes is likely to occur due to the presence of active faults over much of the state. Structural design is also an important factor in regard to the vulnerability of buildings and structures to damage from ground shaking.

In addition to ground shaking, effects of seismic activity may include liquefaction, lateral spreading, and settlement, which could also result in damage to proposed buildings and structures on the project sites. The Plant Site Geotechnical Report calculated a peak ground acceleration of 0.18g for the 475-year return period earthquake and the Quarry Site Geotechnical Report calculated a peak ground acceleration of 0.1g for the 475-year return period earthquake. The *Fresno County Multi-Jurisdictional Hazard Mitigation Plan* (Hazard Mitigation Plan) indicates that the ground acceleration must approach 0.3g before liquefaction occurs in a sandy soil with relative densities typical of the San Joaquin alluvial deposits. In addition to the low risk of seismic events with the potential to result in liquefaction on the project sites, it should be noted that the saturated silt pond wash deposits on the Plant Site that are liquefiable would be removed over the course of mining operations and therefore would not pose a risk to people or structures on the site. For these reasons, it is unlikely that liquefaction or lateral spreading would occur on the project sites, and the potential for the proposed project to expose people or structure substantial adverse effects as a result of liquefaction would be less than significant.

Due to the presence of sandy soils at the Plant Site and Quarry site, it is possible that seismically induced settlement could occur on these sites. This could potentially result in damage to proposed buildings and structures on the project sites. However, all proposed facilities would be developed in accordance with the applicable design standards of the California Building Code, as required by Chapter 15.08, Building Code, of the Fresno

County Ordinance Code. The California Building Code includes seismic design standards are intended to minimize structural damages resulting from seismic shaking and that account for site-specific soil and geologic conditions, including the presence of soils susceptible to settlement. The County verifies project compliance with these standards as part of the building permit acquisition process. Therefore, compliance with the California Building Code and building permit acquisition process would reduce the potential of the proposed project to expose people or structures substantial adverse effects from seismic ground shaking to less than significant.

Upon completion of the mining operations, the Plant Site and Quarry Site would be reclaimed to open space land uses and all structures that will not be used for post-reclamation use on the sites would be removed. Therefore, there would be no impact related to the exposure of people and structures to adverse effects due to seismic ground shaking or seismically induced ground failure.

Level of Significance: Less than significant.

Mitigation Measures: None required.

Impact 4.7-3: Exposure of People or Structures to Potential Substantial Adverse Effects as Result of Landslides

The Fresno County General Plan Background Report (Background Report) indicates that there is the potential for small slides and slumping along the steep banks of rivers and creeks (Fresno County 2024a). The Hazard Mitigation Plan similarly concludes that localized minor landslides are likely to continue to occur in Fresno County when heavy precipitation occurs, as they have in the past (Fresno County 2024a).

The project sites are located in the valley area of the County with the San Joaquin River bluffs, approximately 200-feet in height, located to the west of the project sites across the San Joaquin River, and river bluffs, approximately 80-feet in height, located to the east across North Friant Road. It is possible a small slide could occur along these bluffs. However, the project sites are separated from the bluffs to the east by North Friant Road and from the bluffs to the west by the San Joaquin River. Furthermore, the majority of the project sites would be undeveloped, with structures located on small portions of the sites as shown on Figure 2-6, "Proposed Plant Site Plan," and Figure 2-8, "Proposed Quarry Site Mining Plan" in Chapter 2. Because only small slides are likely to occur, the project sites would not be densely developed, and the project sites are not located immediately adjacent to the bluffs, it is unlikely that substantial adverse impacts to people or structures could occur on the project sites as a result of a landslide along the surrounding

bluffs. Therefore, this impact would be less than significant. The issue of slope stability within the proposed quarry pits is addressed under Impacts 4.7-6 and 4.7-7.

Level of Significance: Less than significant.

Mitigation Measures: None required.

Impact 4.7-4: Result in Substantial Soil Erosion

Potential impacts from soil erosion are analyzed in Section 4.10 of this Draft EIR and summarized here. Under the proposed project, stormwater runoff would be contained within each project site by existing berms (Appendix G-2, "Surface Runoff and Drainage Plan"). The proposed SMRP would maintain the existing 200-foot setback from the San Joaquin River edge at the Quarry Site and would not disturb the easterly river channel bank along the Quarry Site (nor any other portions of the river channel). Therefore, the proposed project would not have the potential to increase erosion by altering existing San Joaquin River velocities. For these reasons, the proposed project would not have the potential to alter drainage patterns on either the Plant Site or Quarry Site in a manner which could result in substantial erosion or siltation offsite.

With regard to on-site conditions, the drainage patterns within the Plant Site and Quarry Site would be changed by the mining and reclamation, but on-site storm runoff, wash water, and sediment would be retained within the quarry pits and ponds. During mining and reclamation operations, stormwater would be managed in accordance with all applicable requirements under the National Pollutant Discharge Elimination System program, including the site-specific Stormwater Pollution Prevention Plan prepared in accordance with Industrial General Permit Requirements and updated Waste Discharge Requirements. Upon completion of reclamation, there would be no off-site run-on into the Plant Site or Quarry Site. Approximately 100.5 acres of the 138.5-acre Plant Site would contain a pond (shown on Figure 2-9, "Plant Site Final Reclaimed Conditions," in Chapter 2) and approximately 108 acres of the 352.4-acre Quarry Site would contain a lake (shown on Figure 2-10, "Quarry Site Final Reclaimed Conditions"), with the hard rock of the quarry slopes above the lake covering and additional approximately 174 acres of the site. Stormwater runoff would sheet flow down the pit slopes and into the open waters of the quarry pits on the Project Sites. The disturbed areas of the Plant Site outside of the pond would be revegetated and the disturbed areas of the Quarry Site outside of the lake and hard rock quarry pit slopes would also be revegetated, which would minimize the potential for erosion to occur from stormwater running off into the reclaimed quarry pits. The hard rock of the Quarry Site quarry pit slopes above the lake cannot be revegetated but it is also not susceptible to erosion. Therefore, neither the operational or post-

reclamation phases of the proposed project would not have the potential to alter drainage patterns in a manner that could result in substantial erosion or siltation onsite.

Refer to Section 4.10 for a detailed analysis.

Level of Significance: Less than significant.

Mitigation Measures: None required.

Impact 4.7-5: Result in the Substantial Loss of Topsoil

Much of the topsoil on the Plant Site and Quarry Site have been previously disturbed or removed and relocated as part of existing mining and processing operations. As described in Section 2.6.2, "Mine Plans," the preservation of the remaining topsoil at both the Plant Site and Quarry Site would be conducted as follows:

- Topsoil would be removed separately and stored in clearly labeled stockpiles for later use as the final cover in reclamation.
- Under typical conditions, topsoil removal would take place approximately one year ahead of mining. If topsoil or overburden stockpiles are expected to remain longer than one year, the stockpiles would be protected from wind and erosion by planting with an erosion control mix of grasses and forbs.

Upon completion of mining and reclamation activities, the project sites would be converted to open space land uses and any remaining topsoil on the Project Sites would not be disturbed.

Because much of the topsoil at the Plant Site and Quarry Site has already been disturbed under existing mining operations, and because the proposed project would salvage and reuse the remaining topsoil on the Project Sites, the potential loss of topsoil as a result of implementation of the proposed project would be less than significant.

Level of Significance: Less than significant.

Mitigation Measures: None required.

Impact 4.7-6: Result in Slope Instability at the Plant Site

The proposed project would excavate a quarry pit at the Plant Site, which is currently relatively flat. The alluvial deposits on the site would be mined with 2H:1V (horizontal:vertical) cut slopes to a depth of approximately 85 feet bgs. The creation of a pit with a depth of 85 feet bgs on the Plant Site would result in the potential for slope

instability to occur if the proposed quarry pit is not developed in accordance with appropriate safety considerations. The Plant Site Geotechnical Report completed a slope stability analysis for the proposed excavation at the Plant Site. The following three cases were evaluated:

- Case 1—slope stability at location of 50-foot setback from Friant Road;
- Case 2—slope stability at location of 25-foot setback elsewhere; and
- Case 3—minimum stability of the mining slope without constraining the failure location to a specific setback location.

The results of the slope stability analysis are summarized in Table 4.7-2, "Results of Plant Site Slope Stability Analysis."

Table 4.7-2
Results of Plant Site Slope Stability Analysis

Case No.	1	2	3
Case Description	Slope Stability at Location of 50-foot Setback from Friant Road	Slope Stability at Location of 25-foot Setback Elsewhere	Minimum Stability of the Mining Slope Without Constraining the Failure Location to a Specific Setback Location
Static Factor of Safety (minimum required is 1.3)	1.69	1.55	1.50
Pseudo-Static (Seismic) Factor of Safety (minimum required is 1.0)	1.37	1.27	1.22

Table Source: Table 7 of Appendix F-1.

As shown in Table 4.7-2, the development of the Plant Site quarry pit with the proposed slopes would achieve the required factors-of-safety for slope stability under both static and seismic loading. Therefore, the potential of the proposed project to result in slope instability is low. Nevertheless, the Plant Site Geotechnical Report notes that conditions not observed and described in the report may be encountered during excavation/mining operations on the Plant Site and that the conclusions of the report should be verified during mining excavation.

The implementation of Mitigation Measure 4.7-6 would require periodic inspection of the Plant Site quarry slopes by a qualified engineering geologist or geotechnical engineer. If conditions during excavation are observed to be different from the conditions described in the Plant Site Geotechnical Report, the engineering geologist or geotechnical engineer would provide recommendations, as needed, to ensure the continued stability of the

Plant Site quarry pit slopes. Implementation of Mitigation Measure 4.7-6 would reduce the potential risks of slope instability due to currently unknown conditions within the Plant Site to less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.7-6: *Plant Site Slope Stability Monitoring*

The operator of the Rockfield Quarry (Operator) shall retain a County-approved qualified engineering geologist or geotechnical engineer experienced in evaluating the stability of slopes in alluvial materials. The engineering geologist or geotechnical engineer shall develop an inspection and reporting program that would be implemented at the Plant Site. In general, the interim mining slopes as well as perimeter slopes should be periodically inspected, and recommendations for the reconfiguration of mining slope gradients, dewatering measures, and localized stabilizations should be developed as dictated by the exposed conditions. The engineering geologist or geotechnical engineer shall document the results of the inspection and any recommendations, and the Operator shall submit the inspection report to the County within 30 days following the inspection. The inspection report shall describe the subsurface materials and groundwater conditions observed and shall compare the observed conditions relative to those identified in the Plant Site geotechnical evaluation completed for the revised reclamation plan by Tetra Tech in 2021 ("Stability Assessment Perimeter Mining Slopes"). The Plant Site geotechnical evaluation shall be appended to the Mitigation Monitoring and Reporting Program and shall be incorporated into the conditions of approval for the project. If the conditions vary from the geotechnical evaluation document characterization, the engineering geologist or geotechnical engineer shall evaluate whether the changes would have an adverse impact on slope stability, and, if so, provide feasible recommendations to mitigate the slope stability concerns to achieve a minimum static factor of safety of 1.3 and a pseudo-static (seismic) factor of safety greater than 1.0. Recommendations shall be implemented within 6 months by the Operator, if feasible, otherwise no later than one year from the publishing of the recommendations.

Level of Significance After Mitigation: Less than significant.

Impact 4.7-7: Result in Slope Instability at the Quarry Site

The proposed project would excavate a 281.9-acre quarry pit to a depth of approximately 600 feet below the ground surface at the Quarry Site, which is currently relatively flat. The overall slope includes: an upper perimeter section within the native alluvium of about 20 to 55 feet high that will be excavated at a 2H:1V gradient; a transition zone within weathered granite, typically about 10 to 35 feet high, that will be mined at a

gradient of ¾H:1V; and a lower section in relatively unweathered and hard to very hard mass granite, about 530 to 570 feet high, that will be excavated with vertical and intervening horizontal benches 50 feet high / wide at an overall ½H:1V gradient. The creation of a pit with a depth of 600 feet bgs on the site would result in the potential for slope instability to occur if the proposed quarry pit is not developed in accordance with appropriate safety considerations. The potential of blasting within the Quarry Site to result in the instability of the San Joaquin River embankment is evaluated the vibration impact analysis under Impact 4.13-6, in Section 4.13, "Noise."

The Quarry Site Geotechnical Memorandum completed a slope stability analysis and kinematic analysis for the proposed excavation at the Quarry Site. The results of the analysis are summarized in Table 4.7-3, "Results of Quarry Site Slope Stability Analysis."

Table 4.7-3
Results of Quarry Site Slope Stability Analysis

Slope Location	North-Facing	South-Facing	East-Facing	West-Facing	West-Facing
Static Factor of Safety (minimum required is 1.5)	1.51	3.41	4.41	3.62	2.30
Pseudo-Static Factor of Safety (minimum required is 1.1)	1.41	3.17	4.12	3.41	2.03

Table Source: Table 2 of Appendix F-3.

As shown in Table 4.7-3, the development of the quarry pit with the proposed slopes would achieve the required factors-of-safety for slope stability under both static and seismic loading. Therefore, the potential of the proposed project to result in overall (i.e., global) slope instability is low. Nevertheless, the Quarry Site Geotechnical Memorandum notes that conditions not observed and described in the report may be encountered during excavation/mining operations on the Quarry Site and that the conclusions of the report should be verified during mining excavation.

The implementation of Mitigation Measure 4.7-7a would require periodic inspection of the Quarry Site quarry slopes by a qualified engineering geologist or geotechnical engineer. If conditions during excavation are observed to be different from the conditions described in the Quarry Site Geotechnical Report and Memorandum, the engineering geologist or geotechnical engineer would provide recommendations, as needed, to ensure the continued stability of the Quarry Site quarry pit slopes. Implementation of

Mitigation Measure 4.7-7a would reduce the potential risks of slope instability due to currently unknown conditions within Quarry Site to less than significant.

As noted in the peer review of the Quarry Site Geotechnical Report completed by Golder (2020), the unweathered granite at the Quarry Site appears to consist of strong granite with an overall rock mass considered to be good to very good quality. The design of quarry pit slopes comprised of good to very good rock masses are typically controlled by kinematic failure modes such as planar, wedge, and toppling type failures. In response to peer review comments, the Quarry Site Geotechnical Memorandum evaluated available boring data to determine if the data would allow the completion of a kinematic analysis. Only geological information obtained from the four geophysically logged borings (MW-1D through 4D shown on Figure 2 of Appendix F-2) are available for kinematic analyses. Although helpful, this information is not sufficient to support developing meaningful or reliable kinematic models for stability evaluations of the planned mining slopes for the mining area extending over 280 acres. Consequently, the Quarry Site Geotechnical Memorandum recommends that additional geologic data should be collected for kinematic analysis of mining slope stability and an adaptive management plan should be implemented to ensure that the quarry pit slopes are adjusted, as needed, to maintain acceptable factors of safety in response to geologic and hydrogeologic conditions encountered within the quarry pit. The current mining plan would start initial excavation in the interior portion of the Quarry Site that is significantly distanced from the mine boundaries and considers that this situation is favorable for acquiring and assessing additional geologic data as mining progresses. In addition, the memorandum notes that the conservative assumption of fully and continuously saturated quarry pit walls used in the global slope stability analysis may not accurately capture localized groundwater conditions that could reduce the kinematic stability of portions of the mining slopes. Such groundwater conditions may include artesian conditions, preferential seepage paths, and piping conditions. Consequently, the Quarry Site Geotechnical memorandum recommends that the proposed project implement a groundwater observation program to provide more detailed information on localized groundwater conditions that could occur as mining progresses.

Consistent with these recommendations, Mitigation Measure 4.7-7b would require the implementation of periodic geologic field surveys and kinematic analysis of the various potential failure modes based on the new data collected. The mapping and the associated quantitative database, interpretations, kinematic analyses, failure potential assessments, and any recommended measures to reduce the risks of the kinematic analysis would be summarized in a written report after the completion of each mapping mobilization. Additionally, Mitigation Measure 4.7-7c would require the installation of a series of piezometers within the hard to very hard intact granitic rock specifically designed to

allow for the observation of differences in water pressures at different depths or within different groups of fractures. Four specific piezometer clusters are recommended, but it is noted that additional piezometers may be required depending on the actual groundwater conditions encountered during mining. Field observations of seepage are also recommended. With implementation of Mitigation Measures 4.7-7a, 4.7-7b, and 4.7-7c, the potential of slope instability in the form of planar, wedge, or toppling type failures at the Quarry Site would be less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.7-7a: *Quarry Site Slope Stability Monitoring*

The operator of the Rockfield Quarry (Operator) shall retain a County-approved qualified engineering geologist or geotechnical engineer experienced in evaluating the stability of slopes in both hard rock and alluvial materials. The engineering geologist or geotechnical engineer shall develop an inspection and reporting program that would be implemented at the Quarry Site. In general, the interim mining slopes as well as perimeter slopes should be inspected as per the inspection and reporting program developed by the engineering geologist or geotechnical engineer. Recommendations for the reconfiguration of mining slope gradients, dewatering measures, and localized stabilizations should be developed as dictated by the exposed conditions. It is anticipated that the inspections will be more frequent until a comprehensive and reliable geologic and groundwater model of the Quarry Site is developed. The survey and monitoring program should at least include the following:

- *Groundwater regime characterization, including effects of dewatering on the aquifers and slope stability;*
- *Rock mass discontinuities and structure characterization; and*
- *Slope stability evaluation, including kinematic failure analyses.*

The engineering geologist or geotechnical engineer shall document the results of each inspection and any recommendations, and the Operator shall submit the inspection report to the County within 30 days following each inspection. The inspection report shall describe the subsurface materials and groundwater conditions observed and shall compare the observed conditions relative to those identified in the Quarry Site geotechnical evaluations completed for the SMRP by Tetra Tech in 2019 and 2021 ("Geological and Geotechnical Assessment Report" and "Response to Peer Review Comment, Geological and Geotechnical Assessment Report"). The Quarry Site geotechnical evaluations shall be appended to the Mitigation Monitoring and Reporting Program. If the conditions vary from the geotechnical evaluation documents characterization, the engineering geologist or geotechnical engineer shall evaluate

whether the changes would have an adverse impact on slope stability or groundwater, and, if so, provide feasible recommendations to mitigate the slope stability concerns to achieve a minimum static factor of safety of 1.5 and a pseudo-static (seismic) factor of safety greater than 1.1. Recommendations shall be implemented within 6 months by the Operator, if feasible, otherwise no later than one year from the publishing of the recommendations.

Mitigation Measure 4.7-7b: *Quarry Site Kinematic Analyses*

During the mining excavations, the County-approved qualified engineering geologist or geotechnical engineer identified in Mitigation Measure 4.4-7a shall carry out periodic field surveys of structural geologic data and shall apply this information to kinematic analyses of the quarry pit. Initially, during the first year of the mining in the bedrock, the field survey shall be carried out every 6 months. After that, during the Phase 1 mining, the mapping shall be carried out every time the excavation exposes an area of approximately 50 vertical feet and 1,000 horizontal feet of previously unmapped slope. This mapping frequency shall continue until a robust geologic model is developed and verified. Subsequent mapping intervals may be increased to about 1 to 2 years, depending on the exposed conditions. If/when the geologic conditions are found to be consistent as mining progresses, the County shall be notified, and the field mapping and kinematic analysis program may be entirely phased out.

As the mapping proceeds, structural domains (i.e., portions of the rock mass with similar patterns of rock mass discontinuities) shall be identified and appropriate kinematic analysis of various failure modes such as planar, wedge, and toppling type failures should be evaluated for each identified structural domain. The analysis shall take into account the groundwater conditions observations required under Mitigation Measure 4.4-7c. The mapping and the associated quantitative database, interpretations, kinematic analyses, failure potential assessment, and any appropriate recommendations to prevent kinematic-type failure shall be summarized in a written report after the completion of each mapping mobilization and submitted to the County by the Operator within 30 days of the completion of each field survey. The report shall also include a summary of the groundwater conditions observations required under Mitigation Measure 4.4-7c below. Recommendations shall be implemented within 6 months by the Operator, if feasible, otherwise no later than one year from the publishing of the recommendations.

Mitigation Measure 4.7-7c: *Quarry Site Groundwater Conditions*

The County-approved qualified engineering geologist or geotechnical engineer identified in Mitigation Measures 4.7-7a and 4.7-7b shall conduct observations of groundwater conditions relevant to slope stability along with the geologic observation of kinematic conditions carried out in support of Mitigation Measure 4.4-7b. These observations shall

focus on the potential presence of:

- *Artesian conditions;*
- *Preferential seepage paths; and*
- *Piping conditions.*

To assist with these observations, a series of piezometers shall be installed within the hard to very hard intact granitic rock. Although there are currently seven monitoring wells in the Quarry Site completed within the intact rock, these wells cover the full interval to be mined. As such, they do not adequately allow for the observation of differences in water pressures at different depths or within different groups of fractures. At least four additional piezometer clusters shall be installed as described below:

- *Two locations spaced equally between MW-1 and MW-2 along the westerly perimeter of the quarry pit along the San Joaquin River;*
- *One location at the eastern boundary near the entry point from Friant Road; and*
- *One location at the southwest limit of the project area between MW-2 and MW-7.*

The installations shall be nested to establish at least three monitoring intervals within the intact bedrock. Each interval shall be about 100 feet long with the shallowest interval extending from the top of the intact bedrock to a depth of about 200 feet bgs, the second interval extending from a depth of approximately 200 feet bgs to approximately 300 feet bgs, and the third interval extending from approximately 300 feet bgs to approximately 400 feet bgs. In no case shall the screened interval for each piezometer section overlap with the interval above or below. Additional groundwater monitoring intervals and/or locations may be required depending on the actual groundwater conditions encountered during mining.

The field observations shall also include assessment of seepage conditions in the mined bedrock slopes, if any are found to occur. Specifically, seepage conditions shall be evaluated that may indicate local or more extensive rock slope instability due to local water pressure conditions. Documentation of groundwater observations shall be submitted to the County as required under Mitigation Measures 4.7-7a and 4.7-7b.

Level of Significance After Mitigation: Less than significant.

Impact 4.7-8: Be Located on Expansive Soil, as Defined in Table 18-1-B of the Uniform Building Code (1994), Creating Substantial Risks to Life or Property

The USDA NRCS (2021) Web Soil Survey description of physical soil properties indicates that the soils on the Plant Site and Quarry Site have low shrink-swell potential. Therefore, the potential of the proposed project to result in substantial risks to life or property due to expansive soils at the project sites would be less than significant.

Level of Significance: Less than significant.

Mitigation Measures: None required.

Impact 4.7-9: Have Soils Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Wastewater Disposal Systems Where Sewers Are Not Available for the Disposal of Wastewater

The proposed project would involve installation of two septic systems on the Quarry Site for disposal of domestic wastewater generated at the site. Two existing septic systems currently operated on the Plant Site would be retained until Phase 1 mining operations are complete. Soils at the project sites generally consist of a sequence of coarse-grained sands and gravels. In general, coarse sediments such as these are permeable enough to be suitable for septic systems. The siting, design, and construction of the proposed septic systems would undergo full review in accordance with Chapter 15.20, "Plumbing Code," of the Fresno County Ordinance Code and with the associated Local Area Management Program and Onsite Wastewater Treatment System Guidance Manual (Fresno County 2018b and 2019). The guidance manual requires property owners to complete a site evaluation that determines the soil type and depth and other site characteristics, such as depth to groundwater, in to determine whether or not it is feasible to utilize an onsite system for waste disposal. If there is any question about the soil texture or structure, grade or proposed use of seepage pits, soil percolation testing must be performed.

The Operator of the Quarry Site would be required to submit septic system design and site evaluation results, and, if necessary, percolation testing results to the Fresno County Public Works and Planning Department for review and comment in order to obtain a permit for the development of the proposed septic systems. Upon completion of proposed mining operations and reclamation activities, the septic systems would be removed from both project sites and the ground would be filled with earth, sand, gravel, concrete, or other approved material, in accordance with the Onsite Wastewater Treatment System Guidance Manual (Fresno County 2018b). Therefore, compliance with existing regulations pertaining to septic systems would reduce the potential of the

proposed project to develop a septic system in soils incapable of adequately supporting such a system to less than significant.

Level of Significance: Less than significant.

Mitigation Measures: None required.

Impact 4.7-10: Directly or Indirectly Destroy a Unique Geological Feature

Unique geological features include attractive or interesting rock formations, erosional features, and/or landforms that represent a public attraction due to their unusual appearance, exemplary characteristics, and/or educational value. As described under the "Regional and Local Topography" subsection of Section 4.7.1.1, above, the existing topography at the Plant Site and Quarry Site and the immediately surrounding areas is generally flat, and neither site contains unique geological features. The areas of the San Joaquin River near the Plant Site and Quarry Site do not have geological characteristics that differ from areas upstream and downstream of the project sites. The San Joaquin River bluffs, approximately 200-feet in height, are located to the west of the project sites across the San Joaquin River, and river bluffs approximately 80-feet in height are located to the east across North Friant Road. The Plant Site and Quarry Site mining operations and reclamation activities would occur within the existing footprints of the sites and would not affect the surrounding river bluffs. Therefore, the proposed project would not directly or indirectly impact a unique geological feature.

Level of Significance: No impact.

Mitigation Measures: None required.

Impact 4.7-11: Directly or indirectly Destroy a Unique Paleontological Resource

The geologic units within the Plant Site and Quarry Site are summarized above in Table 4.7-1. As described in the 'Paleontological Analysis" subsection of Section 4.7.3.2, above, a sensitivity ranking was assigned to each of the geologic units within the project area. The rankings are summarized in Table 4.7-4, "Paleontological Sensitivity of Geologic Units within the Plant Site and Quarry Site."

Table 4.7-4
Paleontological Sensitivity of Geologic Units within the Plant Site and Quarry Site

Location	Matthews and Burnett (1965) Geologic Map Formations[1] (*Sensitivity Ranking*)	Marchand (1976) Geologic Map Formations[1] (*Sensitivity Ranking*)
Inside Plant Site	Pleistocene-age nonmarine deposits (Qc) (i.e., "Riverbank Formation")[2] are exposed at the eastern edge of the Plant Site. (**High Potential**) Recent alluvium (Qsc) cover the remainder of the Plant Site.[3] (**Low Potential**) The recent alluvium (Qsc) deposits on the Plant Site are currently overlain by undocumented artificial fill (Qaf) and silt pond wash deposits (Qaf_{sp}).[5] (**Low Potential**)	Recent alluvium (hal) covers the northern and southwestern portions of the Plant Site.[3] (**Low Potential**) The remainder of the Plant Site is covered the Late Pleistocene-age upper member of the Modesto Formation (m2).[4] (**High Potential**)
Outside Plant Site	Exposures of the older and fossiliferous nonmarine Early Pleistocene "Turlock Lake Formation" and Pliocene-Holocene "Tulare Formations" are mapped as "Qp" outside of, but within 600 feet of, the east boundary of the Plant Site. (**High Potential**)	No significant features noted.
Inside Quarry Site	Pleistocene-age nonmarine deposits (Qc) (i.e., "Riverbank Formation")[2] – exposed at the western margin of Quarry Site. (**High Potential**) Recent alluvium (Qsc) covers the remainder of the Quarry Site.[3] (**Low Potential**)	Recent alluvium (hal) covers the western margin of the Quarry Site.[3] (**Low Potential**) The remainder of the Quarry Site is covered by the Late Pleistocene-age upper member of the Modesto Formation (m2).[4] (**High Potential**)
Outside Quarry Site	An exposure of much older (Mesozoic) basement and non-fossiliferous granodiorite is mapped as "grg" outside of, but within 1,200 feet of, the northeast tip of the Quarry Site. (**No Potential**)	No significant features noted.

Table Source: Matthews and Burnett 1965; Marchand 1976; Tetra Tech 2021a.

Table Notes:

1. Mesozoic granite or granodiorite (grg) is assumed to underlie all of the surface formations, with the exception of portions of the Plant Site underlain by tuff (Tc).
2. Riverbank Formation (Qc) = The Pleistocene nonmarine deposits that consist of older alluvium and dissected fan deposits of granitic sand, silt, and clay.
3. Recent alluvium (Qsc or hal) = Holocene-age alluvium that consists of alluvial sand, silt, and gravel from recent floodplains and low terraces.
4. Upper member of the Modesto Formation (m2) = Late Pleistocene-age deposits that consist of alluvial sand, silt, and gravel from channels, terraces, and upper fans.
5. This information is based on the field exploration documented in the Plant Site Geotechnical Report (Appendix F-1).

Despite different interpretations of the surficial geology within the Plant Site by Matthews and Burnett (1965) and Marchand (1976), project-related excavation and ground disturbance within any undisturbed native sediments at the Plant Site and Quarry Site during proposed mining operations and reclamation activities would potentially destroy significant paleontological resources in the Riverbank and/or Modesto formations. In addition, although the Turlock Lake, and Tulare formations are mapped outside of the Plant Site, the proximity to the Plant Site indicates these geologic units could also occur at unknown depths within the Plant Site. Therefore, the proposed mining operations and ground disturbing reclamation activities at the Plant Site could also destroy paleontological resources in these formations. This is a potentially significant impact.

Excavation of the granite or granodiorite bedrock at the Quarry Site would not have the potential to destroy paleontological resources. Additionally, upon completion of mining and reclamation activities, ground disturbing activities are not anticipated to occur at the Plant Site and Quarry Site, which would be converted to open space land use. Therefore, there would be no impact to paleontological resources after completion of final reclamation.

The Paleontological Memorandum (Appendix F-2) assumed that mining at the Quarry Site under the proposed project would only occur in the granite or granodiorite bedrock, and consequently concluded that there would be no impact to paleontological resources at the Quarry Site. However, as described in Chapter 2, any alluvial aggregate remaining after the completion of existing mining activities would be excavated under the proposed project. Therefore, this analysis concludes that there would be the potential for mining operations and reclamation activities to destroy paleontological resources within the remaining alluvial aggregate at the Quarry Site, similar to the Plant Site, and requires the implementation of Mitigation Measure 4.7-11 at both the Plant Site and Quarry Site. Mitigation Measure 4.7-11 would require the implementation of worker training to recognize paleontological resources, that excavation and ground-disturbing activities be halted should a paleontological resource be encountered, and the curation of any substantial find. The implementation of Mitigation Measure 4.7-11 would reduce the potential of proposed mining and reclamation activities to destroy paleontological resources to less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.7-11: *Paleontological Resources*

Prior to initiation of ground disturbance, the Operator of the project sites shall develop and submit to the County Planning Department for review and approval a project-

specific paleontological resource impact mitigation program (PRIMP) for the Plant Site and Quarry Site. The PRIMP shall only be implemented at the Quarry Site until mining of any remaining alluvial deposits is complete. The PRIMP shall not be required at the Quarry Site if the alluvial deposits remaining on the site are mined under the existing CUP. The PRIMP should be developed by a professional paleontologist (Project Paleontologist, Principal Investigator) who meets Society of Vertebrate Paleontology (2010) qualification standards. The PRIMP will specify the steps to be taken to mitigate the potential of mining excavation and reclamation-related ground disturbing activities to destroy paleontological resources. At a minimum, these measures shall include development of a Worker's Environmental Awareness Training Program that shall be presented in-person to all field personnel prior to the start of each phase of project-related earth-moving activities, as well as to any new field personnel prior to beginning work on the project sites. The following directive shall be included in employee and contractor training materials:

> *"The subsurface of the quarry may be sensitive for paleontological resources in the alluvial (non-bedrock) materials. If paleontological resources are encountered during subsurface disturbance, all ground disturbing activities within 100 feet [or another appropriate distance specified in the PRIMP] of the find shall be redirected and a professional paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Employees and contractors shall not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and such trace fossil evidence of past life as animal tracks. Employee/Contractor acknowledges and understands that excavation or removal of paleontological material is prohibited by law and constitutes a misdemeanor under California Public Resources Code, Section 5097.5."*

A copy of the training materials and documentation of completed training shall be provided to the County for review upon request.

The PRIMP shall specify whether field monitoring during earthmoving activities is required, and, if so, the frequency of required monitoring (i.e., full-time, spot-check, etc.). Approximately 96 acres of the Plant Site have already been partially mined to depths of between 5 to 32 feet bgs and backfilled. (See 2.4.2.1.) Any monitoring (i.e., spot-check) should be limited to mining of the remaining undisturbed alluvial material. The PRIMP shall require that if a paleontological resource is encountered during earthmoving activities, the Operator shall notify the County and all activity within 100 feet (or another appropriate distance specified in the PRIMP) of the find shall halt until the paleontological resource can be evaluated by a professional paleontologist. The paleontologist shall evaluate the resource

and determine its significance. If significant, the paleontologist shall immediately notify the County and the Operator. The PRIMP shall provide details about fossil collection, analysis, and preparation for permanent curation at an approved repository. Lastly, the PRIMP shall describe the different reporting standards to be used for negative or positive findings during construction activities.

Level of Significance After Mitigation: Less than significant.

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4.8—GREENHOUSE GAS EMISSIONS

This section of the Draft EIR documents potential impacts associated with greenhouse gas (GHG) emissions and plans for reducing GHG emissions that would occur as a result of the project.

The information in this section is based on a peer review of Applicant-prepared studies and publicly available sources. The Applicant-prepared studies used are:

- *Air Quality, Health Risk, and Climate Change Impact Assessment, CEMEX Rockfield Modification Project, County of Fresno, California*. Prepared by Sespe Consulting, Inc. [Sespe]. December 4, 2019. (Appendix D-1, "Air Quality, Health Risk, and Climate Change Impact Assessment")
- *Rockfield Air Quality Section Addendum No. 2, Revision 2*. CEMEX Rockfield Modification Project. Prepared by Sespe. March 7, 2022. (Appendix D-2, "Addendum to Air Quality, Health Risk, and Climate Change Impact Assessment")

The *Air Quality, Health Risk, and Climate Change Impact Assessment* (Air Quality Assessment) was peer reviewed by County-retained Taylor Environmental Services, Inc. (Taylor Environmental) in September 2020. The peer review comments are on file with the County. In October of 2020, Sespe prepared *Addendum No. 2 (Version 1) to the Air Quality, Health Risk, and Climate Change Impact Assessment.* Comments were provided by Taylor Environmental and Sespe updated the document in response. In December 2020, Taylor Environmental confirmed that *Addendum No. 2 (Version 1)* adequately addressed the peer review comments. In May 2021, comments on *Addendum No. 2 (Version 1)* were provided by Benchmark Resources. Per Benchmark's comments, Sespe provided an updated document (*Addendum No. 2, Revision 1*) in June 2021. Further comments were provided by Benchmark in February 2022. In response, Sespe revised the addendum again in March 2022, creating *Addendum No. 2, Revision 2*. Benchmark confirmed that the *Rockfield Air Quality Section Addendum No. 2, Revision 2* (Addendum) completed in March 2022 adequately addressed all comments and questions.

4.8.1 Environmental Setting

This section discusses GHGs and climate change issues to provide a context for the analysis of project impacts associated with GHG emissions regarding the Quarry Site and Plant Site (collectively project sites). It also provides a discussion of the actions and phenomena that contribute to climate change and puts into context global, national, and state emissions of GHGs. The term "climate change" is often used interchangeably with

the term "global warming;" however, "climate change" is the preferred term because it helps convey that there are other changes in addition to rising temperatures.

4.8.1.1 The Greenhouse Effect and Greenhouse Gases

GHGs trap heat in the atmosphere. Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and water vapor (H_2O). Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Man-made GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3), are associated with certain industrial products and processes. The major GHGs emitted by human activities remain in the atmosphere for periods ranging from decades to centuries; therefore, it is expected that atmospheric concentrations of GHGs will continue to rise over the next few decades (U.S. Environmental Protection Agency [EPA] 2021).

Human activity has been increasing the concentration of GHGs in the atmosphere (mostly carbon dioxide from combustion of coal, oil, and gas, and a few other trace gases). Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate.

A warming trend from anthropogenic emissions, or human activity, from the pre-industrial period to the present is predicted to persist for centuries to millennia and continue to cause further long-term changes in the climate system, such as sea level rise, with associated impacts. Climate models project robust differences in regional climate characteristics between present-day and global warming of 1.5°C, and between 1.5°C and 2°C. These differences include increases in mean temperature in most land and ocean regions, hot extremes in most inhabited regions, heavy precipitation in several regions, and the probability of drought and precipitation deficits in some regions (Intergovernmental Panel on Climate Change [IPCC] 2018).

The effect each GHG has on climate change is measured as a combination of the volume or mass of its emissions, plus the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential, and is expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of "carbon dioxide equivalent" (CO_2e).

4.8.1.2 Contributions to Greenhouse Gas Emissions

Global

Anthropogenic GHG emissions worldwide in 2014 totaled approximately 48,892 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) (World Resources Institute 2017). The CO_2 equivalent for a gas is derived by multiplying the tons of the gas by the associated global warming potential, such that MMT CO_2e = (million metric tons of a GHG) x (global warming potential of the GHG). For example, the global warming potential for methane is 21. This means that emissions of 1 million metric tons of methane are equivalent to emissions of 21 million metric tons of CO_2. Six countries—China, the U.S., the Russian Federation, India, Japan, and Brazil—and the European Community accounted for approximately 53 percent of the total 2014 global emissions, approximately 25,831 MMT CO_2e (World Resources Institute 2017).

United States

In 2019, the United States produced 6,558 MMT CO_2e. The primary GHG emitted by human activities in the United States was CO_2, representing approximately 81 percent of total GHG emissions. The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 92 percent of the CO_2 emissions. Since 1990, gross U.S. GHG emissions have increased by 1.8 percent. From year to year, emissions can rise and fall due to changes in the economy, the price of fuel, and other factors. In 2019, U.S. GHG emissions decreased 1.7 percent compared to 2018 levels. The decline was largely driven by the decrease in CO_2 emissions from fossil fuel combustion. The decrease in CO_2 emissions from fossil fuel combustion was a result of a 1 percent decrease in total energy use and reflects a continued shift from coal to less carbon intensive natural gas and renewables in the electric power sector (EPA 2021).

State of California

According to the GHG inventory data compiled by the California Air Resources Board (ARB) for the California Greenhouse Gas Inventory for 2000—2018, California emitted 425 MMT CO_2e of GHGs, including emission resulting from out-of-state electrical generation (ARB 2020). The largest source of GHG emissions is transportation, which represents tailpipe emissions from on-road vehicles and direct emissions from other off-road mobile sources, followed by industry, electric power production from both in-state and out-of-state sources, agriculture, and other sources, which include commercial and residential land uses. These primary contributors to California's GHG emissions and their relative contributions in 2018 are presented below in Table 4.8-1, "Greenhouse Gas Sources in California."

Table 4.8-1
Greenhouse Gas Sources in California

Source	Percent of Total
Transportation	39.9%
Industrial Uses	21.0%
Electricity Generation [a]	14.8%
Agriculture	7.7%
Residential Uses	6.1%
Commercial Uses	3.7%
Recycling and Waste	2.1%
High global warming potential Substances	4.8%
TOTAL[b]	**100%**

Table Source: ARB 2020.
Table Notes:
a. Includes emissions associated with imported electricity
b. Totals may not sum due to rounding.

4.8.1.3 Potential Effects of Human Activity on Climate Change

Globally, climate change has the potential to impact numerous environmental resources though uncertain impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Estimated global warming from human activity is currently increasing at 0.2°C (likely between 0.1°C and 0.3°C) per decade due to past and ongoing emissions (IPCC 2018).

The 2018 *Safeguarding California Plan: 2018 Update* report prepared by the California Natural Resources Agency (CNRA 2018) identified anticipated impacts to California due to climate change through extensive modeling efforts. The IPCC's Working Group II Report, *Climate Change 2007: Impacts, Adaptation and Vulnerability*, also describes anticipated impacts on a global scale. Collectively, the two reports indicate general climate changes in California may include the following the following events:

- Increasing evaporation;
- Rearrangement of ecosystems as species and ecosystems shift northward and to higher elevations;
- Increased frequency, duration, and intensity of conditions conducive to air pollution formation (particularly ozone);
- Reduced precipitation, changes to precipitation and runoff patterns, reduced snowfall (precipitation occurring as rain instead of snow), earlier snowmelt, decreased snowpack, and increased agricultural demand for water;

- Increased experiences of heat waves;
- Increased growing season and increased growth rates of weeds, insect pests and pathogens;
- Inundation by sea level rise, and exacerbated shoreline erosion; and
- Increased incidents and severity of wildfire events and expansion of the range and increased frequency of pest outbreaks (CNRA 2018 and IPCC 2007).

Changes described above are based on the results of several models prepared under different climatic scenarios; therefore, discrepancies may occur between projections and interpretations.

4.8.2 Regulatory Setting

Climate change has become widely recognized as a threat to the global climate, economy, and population. As a result, the climate change regulatory setting – at the federal, state and local levels– is complex and evolving. This section identifies key legislation, executive orders, and seminal court cases related to climate change that are relevant to the project's GHG emissions.

4.8.2.1 Federal

In 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tons of GHG emissions per million dollars of gross domestic product) of the U.S. economy by 18 percent by 2012. The goal did not establish any binding reduction mandates. Rather, the EPA began to administer a variety of voluntary programs and partnerships with GHG emitters in which the EPA partners with industries that produce and utilize synthetic gases to reduce emissions of particularly potent GHGs.

The Bush Administration's approach to addressing climate change was challenged in *Massachusetts et al. v. Environmental Protection Agency* (2007) 549 U.S. 497. In this decision, the U.S. Supreme Court held that the EPA was authorized by the Clean Air Act to regulate CO_2 emissions from new motor vehicles in the event that such emissions contribute to climate change. The Court did not mandate that the EPA enact regulations to reduce GHG emissions but found that the only instances in which the EPA could avoid taking action were if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" as to why the EPA cannot or will not exercise its discretion to determine whether GHGs contribute to climate change.

On December 7, 2009, the EPA issued an endangerment finding under the Clean Air Act, concluding that GHGs threaten the public health and welfare of current and future generations and that motor vehicles contribute to GHG pollution. These findings provide

the basis for adopting new national regulations to mandate GHG emission reductions under the federal Clean Air Act.

The following four sections summarize EPA's recent regulatory activities with respect to various types of GHG sources.

Mandatory Greenhouse Gas Reporting Rule

Congress passed the Consolidated Appropriations Act of 2008 (HR 2764) in December 2007, which includes provisions requiring the establishment of mandatory GHG reporting requirements. On September 22, 2009, EPA issued a final rule to require reporting of GHG emissions from all sectors of the United States economy. Beginning on January 1, 2010, fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 metric tons or more of CO_2e per year are required to report GHG emissions data to EPA annually. The first annual reports for the largest emitting facilities, covering calendar year 2010, were submitted to EPA in 2011. This new program covers approximately 85 percent of the nation's GHG emissions and applies to roughly 10,000 facilities. U.S. EPA's new reporting system provides a better understanding of GHG sources and guides development of the best possible policies and programs to reduce emissions. The data also allows the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective methods to reduce emissions in the future.

Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule

The Clean Air Act established the Prevention of Significant Deterioration and Title V programs, which applies to stationary sources (new major sources or major modifications at existing sources for pollutants where the area the source is located is in attainment or unclassifiable with the National Ambient Air Quality Standards [NAAQS]). The Prevention of Significant Deterioration program applicability thresholds are up to 250 tons per year of an attainment pollutant, while the Title V applicability thresholds are up to 100 tons per year of a regulated air pollutant. On June 3, 2010, EPA published a final rule that tailors the applicability criteria that determine whether stationary sources and modification projects become subject to permitting requirements for GHG emissions under the Prevention of Significant Deterioration and Title V programs of the Clean Air Act (tailoring rule). Under the tailoring rule, only the largest sources of GHGs (i.e., those responsible for 70 percent of the GHG pollution from stationary sources) would be subject to these GHG permitting requirements.

This rule establishes two initial steps of the phase-in and commits the agency to take certain actions on future steps addressing smaller sources, but it excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for GHG

emissions until at least April 30, 2016. Under Step 1, effective January 2, 2011, only sources currently subject to the Prevention of Significant Deterioration permitting program would be subject to permitting requirements for their GHG emissions. For these projects, only GHG increases of 75,000 tons per year or more of total GHGs, on a CO_2e basis, would need to determine the Best Available Control Technology for their GHG emissions. Similarly for the Title V program, only sources currently subject to the program due to their criteria air pollutant emissions would be subject to Title V requirements for GHGs. During Step 2 (July 1, 2011 to June 30, 2013), Prevention of Significant Deterioration permitting requirements will apply to new or modified facilities that emit GHG emissions of at least 100,000 tons per year CO_2e and modifications at existing facilities that increase GHG emissions by at least 75,000 tons per year CO_2e. Facilities that emit 100,000 tons per year CO_2e or more will be subject to Title V permitting requirements. Under Step 2, Prevention of Significant Deterioration and Title V permitting requirements would apply to sources generating GHG emissions at the specified levels even if they do not exceed permitting thresholds for any other pollutant.

On June 23, 2014, the U.S. Supreme Court issued its decision in Utility Air Regulatory Group v. E.P.A., (2014) 573 U.S. 302. The Court held that EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

EPA and NHTSA Joint Rulemaking for Vehicle Standards

In response to the Massachusetts v. EPA U.S. Supreme Court ruling discussed above, the Bush Administration issued an Executive Order on May 14, 2007, directing the EPA, the Department of Transportation (DOT), and the Department of Energy (DOE) to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. On December 19, 2007, the Energy Independence and Security Act of 2007 was signed into law, which requires an increased Corporate Average Fuel Economy (CAFE) standard of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020. The Energy Independence and Security Act requires establishment of interim standards (from 2011 to 2020) that will be the "maximum feasible average fuel economy" for each fleet. On October 10, 2008, the National Highway Traffic Safety Administration (NHTSA) released a final environmental impact statement analyzing proposed interim standards for passenger cars and light trucks in model years 2011 through 2015. The NHTSA issued a final rule for model year 2011 on March 30, 2009. On June 30, 2009, the EPA granted a waiver for California, discussed in more detail below, for its GHG emission standards for motor vehicles.

On May 7, 2010, the EPA and the NHTSA issued a final rule regulating fuel efficiency and GHG standards for cars and light-duty trucks for model years 2012–2016. This rule required vehicles to achieve the 250 g CO_2/mile (35 mpg if achieved only by fuel efficiency) standard beginning with the model 2016 fleet. This rule was consistent with the target of the Energy Independence and Security Act of 2007. On May 21, 2010, President Obama issued a memorandum to the Secretaries of Transportation and Energy, and the Administrators of the EPA and the NHTSA calling for establishment of additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, in 2011, the EPA and the NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks, which applies to vehicles from model year 2014 through 2018. EPA and NHTSA have adopted standards for CO_2 emissions and fuel consumption, respectively, tailored to each of three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to EPA, this program will reduce GHG emissions and fuel consumption for affected vehicles by 6 to 23 percent. Additionally, in 2012, EPA and NHTSA approved GHG and fuel economy standards of 163 g CO_2/mile (i.e., 54.8 mpg if achieved only by fuel efficiency) for light duty vehicles from model year 2017 through 2025. Fuel efficiency standards for heavy-duty pickup trucks and vans built in model years 2030-2035 were finalized by NHTSA in 2024 (NHTSA 2024).

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 includes the following key measures, which would aid in the reduction of national GHG emissions:

1) Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
2) Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by Model Year 2020; directs National Highway Traffic Safety Administration to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
3) Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Additional provisions of the Energy Independence and Security Act address energy savings in government and public institutions, promoting research for alternative energy,

additional research in carbon capture, international energy programs, and the creation of "green jobs."

4.8.2.2 State

Legislation, Regulations, and Executive Orders

California's legislation, regulations, and executive orders pertaining to climate change are summarized in Table 4.8-2, "California Climate Change Legislation," Table 4.8-3, "California Climate Change Regulations," and Table 4.8-4, "California Climate Change Executive Orders."

Table 4.8-2
California Climate Change Legislation

Date	Legislation	Description
October 2023	Senate Bill 253 (SB 253) and 261 (SB 261)	SB 253 and SB 261 require public and private companies doing business in California to disclose their carbon emissions and climate-related financial risks. The Climate Corporate Data Accountability Act (SB 253) requires large businesses operating in California to publicly report their greenhouse gas emissions. The Climate-Related Financial Risk Act (SB 261) mandates that companies disclose the threats they face as a result of climate change.
September 16, 2022	Assembly Bill 1279 (AB 1279) (Muratsuchi, Chapter 337, Statutes of 2022)	AB 1279 establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires ARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage (CCUS) technologies. The 2022 Climate Change Scoping Plan was adopted by ARB in December 2022 consistent with AB 1279. The Scoping Plan is discussed later in this section.
September 16, 2022	Senate Bill 905 (SB 905) (Caballero, Chapter 359, Statutes of 2022)	SB 905 requires ARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate CCUS and carbon dioxide removal (CDR) projects and technology.

Date	Legislation	Description
September 2, 2022	Senate Bill 846 (SB 846) (Dodd, Chapter 239, Statutes of 2022)	SB 846 extends the Diablo Canyon Power Plant's sunset date by up to five additional years for each of its two units and seeks to make the nuclear power plant eligible for federal loans. The bill requires that the California Public Utilities Commission (CPUC) not include and disallow a load-serving entity from including in their adopted resource plan, the energy, capacity, or any attribute from the Diablo Canyon power plant.
September 16, 2022	Senate Bill 1020 (SB 1020) (Laird, Chapter 361, Statutes of 2022)	SB 1020 adds interim renewable energy and zero carbon energy retail sales of electricity targets to California end-use customers set at 90 percent in 2035 and 95 percent in 2040. It accelerates the timeline required to have 100 percent renewable energy and zero carbon energy procured to serve state agencies from the original target year of 2045 to 2035. This bill requires each state agency to individually achieve the 100 percent goal by 2035 with specified requirements. This bill requires the CPUC, California Energy Commission (CEC), and ARB, on or before December 1, 2023, and annually thereafter, to issue a joint reliability progress report that reviews system and local reliability.
September 16, 2022	Senate Bill 1137 (SB 1137) (Gonzales, Chapter 365, Statutes of 2022)	SB 1137 prohibits the development of new oil and gas wells or infrastructure in health protection zones, as defined, except for purposes of public health and safety or other limited exceptions. The bill requires operators of existing oil and gas wells or infrastructure within health protection zones to undertake specified monitoring, public notice, and nuisance requirements. The bill requires ARB to consult and concur with the California Geologic Energy Management Division (CalGEM) on leak detection and repair plans for these facilities, adopt regulations as necessary to implement emission detection system standards, and collaborate with CalGEM on public access to emissions detection data.
September 16, 2022	Senate Bill 1075 (SB 1075) (Skinner, Chapter 363, Statutes of 2022)	SB 1075 requires ARB, by June 1, 2024, to prepare an evaluation that includes: policy recommendations regarding the use of hydrogen.
September 16, 2022	Assembly Bill 1757 (AB 1757) (Garcia, Chapter 341, Statutes of 2022)	AB 1757 requires the California Natural Resources Agency (CNRA), in collaboration with ARB, other state agencies, and an expert advisory committee, to determine a range of targets for natural carbon sequestration, and for nature-based climate solutions, that reduce GHG emissions in 2030, 2038, and 2045 by January 1, 2024. These targets must support state goals to achieve carbon neutrality and foster climate adaptation and resilience.

Date	Legislation	Description
September 30, 2022	Senate Bill 1206 (SB 1206) (Skinner, Chapter 884, Statutes of 2022)	SB 1206 mandates a stepped sales prohibition on newly produced high- global warming potential (GWP) HFCs to transition California's economy toward recycled and reclaimed HFCs for servicing existing HFC-based equipment. Additionally, SB 1206 also requires ARB to develop regulations to increase the adoption of very low-, i.e., GWP < 10, and no-GWP technologies in sectors that currently rely on higher-GWP HFCs.
September 23, 2021	Senate Bill 27 (SB 27) (Skinner, Chapter 237, Statutes of 2021)	SB 27 requires CNRA, in coordination with other state agencies, to establish the Natural and Working Lands Climate Smart Strategy by July 1, 2023. This bill also requires ARB to establish specified CO_2 removal targets for 2030 and beyond as part of its Scoping Plan.
September 23, 2021	Senate Bill 596 (SB 596) (Becker, Chapter 246, Statutes of 2021)	SB 596 requires ARB, by July 1, 2023, to develop a comprehensive strategy for the state's cement sector to achieve net-zero-emissions of GHGs associated with cement used within the state as soon as possible, but no later than December 31, 2045. The bill establishes an interim target of 40 percent below the 2019 average GHG intensity of cement by December 31, 2035.
2019	Senate Bill 576 (SB 576) (Umberg, Chapter 374, Statutes of 2019)	SB 576 mandates that the Ocean Protection Council develop and implement a coastal climate adaptation, infrastructure, and readiness program to improve the climate change resiliency of California's coastal communities, infrastructure, and habitat.
2019	Assembly Bill 65 (AB 65) (Petrie-Norris, Chapter 347, Statutes of 2019)	This bill requires the State Coastal Conservancy, when it allocates any funding appropriated pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018, to prioritize projects that use natural infrastructure in coastal communities to help adapt to climate change.
2018	Senate Bill 100 (SB 100) (De León, Chapter 312, Statutes of 2018)	SB 100 mandates that the CPUC, CEC, and ARB plan for 60% of total retail sales of electricity in California to come from eligible renewable energy resources and zero- carbon resources by December 31, 2045. This updated RPS preempts the ARB's 33% by 2020 goal mandated by Senate Bill X1-2.
2018	Assembly Bill 2127 (AB 2127) (Ting, Chapter 365, Statutes of 2018)	This bill requires the CEC, working with ARB and the CPUC, to prepare and biennially update a statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption required for the state to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030 and of reducing emissions of GHGs to 40% below 1990 levels by 2030. The bill requires the CEC to regularly seek data and input from stakeholders relating to electric vehicle charging infrastructure.

Date	Legislation	Description
2018	Senate Bill 30 (SB 30) (Lara, Chapter 614, Statutes of 2018)	This bill requires the Insurance Commissioner to convene a working group to identify, assess, and recommend risk transfer market mechanisms that, among other things, promote investment in natural infrastructure to reduce the risks of climate change related to catastrophic events, create incentives for investment in natural infrastructure to reduce risks to communities, and provide mitigation incentives for private investment in natural lands to lessen exposure and reduce climate risks to public safety, property, utilities, and infrastructure. The bill requires the policies recommended to address specified questions.
July 26, 2017	Assembly Bill 617 (Christina Garcia, Chapter 136, Statutes of 2017)	Companion to Cap-and-Trade: Establishes a groundbreaking program to measure and reduce air pollution from mobile and stationary sources at the neighborhood level in the communities most impacted by air pollutants. Requires the Air Resources Board (ARB) to work closely with local air districts and communities to establish neighborhood air quality monitoring networks and to develop and implement plans to reduce emissions. The focus on community-based air monitoring and emission reductions will provide a national model for enhanced community protection.
July 26, 2017	Assembly Bill 398 (Eduardo Garcia, Chapter 135, Statutes of 2017)	Cap-and-Trade Extension: Extends and improves the Cap and Trade Program, which will enable the state to meet its 2030 emission reduction goals in the most cost-effective manner. Furthermore, extending the Cap and Trade Program will provide billions of dollars in auction proceeds to invest in communities across California.
September 19, 2016	Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016)	Short-lived Climate Pollutants: Establishes statewide reduction targets for short-lived climate pollutants.
September 8, 2016	Assembly Bill 197 (Eduardo Garcia, Chapter 250, Statutes of 2016)	GHG Regulations: Prioritizes direct emission reductions from large stationary sources and mobile sources.
September 8, 2016	Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016)	GHG emission reduction target for 2030: Establishes a statewide GHG emission reduction target of 40% below 1990 levels by 2030.
October 8, 2015	Senate Bill 379	Local Climate Adaptation: Requires cities and counties to include climate adaptation and resiliency strategies in the safety elements of their general plans.
October 7, 2015	Senate Bill 350 (De León, Chapter 547, Statutes of 2015)	Clean Energy and Pollution Reduction Act of 2015: Establishes targets to increase retail sales of renewable electricity to 50% by 2030 and double the energy efficiency savings in electricity and natural gas end uses by 2030.

Date	Legislation	Description
September 21, 2014	Senate Bill 605 (Lara, Chapter 523, Statutes of 2014)	Short-lived climate pollutants: Requires the State ARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016.
September 21, 2014	Senate Bill 1275, (De León, Chapter 530, Statutes of 2014)	Charge Ahead California Initiative: Establishes a State goal of 1 million zero-emission and near-zero-emission vehicles in service by 2020. Amends the enhanced fleet modernization program to provide a mobility option. Establishes the Charge Ahead California Initiative requiring planning and reporting on vehicle incentive programs and increasing access to and benefits from zero-emission vehicles for disadvantaged, low-income, and moderate-income communities and consumers.
September 21, 2014	Senate Bill 1204 (Lara, Chapter 524, Statutes of 2014)	California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program: Creates the California Clean Truck, Bus, and Off-Road Vehicle and Equipment Technology Program funded by the Greenhouse Gas Reduction Fund for development, demonstration, precommercial pilot, and early commercial deployment of zero- and near-zero emission truck, bus, and off-road vehicle and equipment technologies, with priority given to projects benefiting disadvantaged communities.
September 28, 2013	Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013)	Alternative fuel and vehicle technologies: funding programs: Extends until January 1, 2024, extra fees on vehicle registrations, boat registrations, and tire sales in order to fund the AB 118, Carl Moyer, and AB 923 programs that support the production, distribution, and sale of alternative fuels and vehicle technologies and air emissions reduction efforts. The bill suspends until 2024 ARB's regulation requiring gasoline refiners to provide hydrogen fueling stations and appropriates up to $220 million of AB 118 money to create a hydrogen fueling infrastructure in the State.
September 28, 2013	Assembly Bill 1092 (Levine, Chapter 410, Statutes of 2013)	Building standards: electric vehicle charging infrastructure: Requires the Building Standards Commission to adopt mandatory building standards for the installation of future electric vehicle charging infrastructure for parking spaces in multifamily dwellings and nonresidential development.
September 30, 2012	Senate Bill 535 (De León, Chapter 830, Statutes of 2012)	Greenhouse Gas Reduction Fund and Disadvantaged Communities: Requires the California Environmental Protection Agency to identify disadvantaged communities; requires that 25% of all funds allocated pursuant to an investment plan for the use of moneys collected through a cap-and-trade program be allocated to projects that benefit disadvantaged communities and 10% of those 25% be use within disadvantaged communities; and requires the Department of Finance to include a description of how these requirements are fulfilled in an annual report.

Date	Legislation	Description
September 30, 2012	Assembly Bill 1532 (J. Perez, Chapter 807, Statutes of 2012)	Greenhouse Gas Reduction Fund in the Budget: Requires the Department of Finance to develop and submit to the Legislature an investment plan every three years for the use of the Greenhouse Gas Reduction Fund; requires revenue collected pursuant to a market-based compliance mechanism to be appropriated in the Annual Budget Act; requires the department to report annually to the Legislature on the status of projects funded; and specifies that findings issued by the Governor related to "linkage" as part of a market-base compliance mechanism are not subject to judicial review.
April 12, 2011	Senate Bill X1-2 (Simitian, Chapter 1, Statutes of 2011)	Governor Edmund G. Brown, Jr. signed Senate Bill X1-2 into law to codify the ambitious 33% by 2020 goal. SBX1-2 directs California Public Utilities Commission's Renewable Energy Resources Program to increase the amount of electricity generated from eligible renewable energy resources per year to an amount that equals at least 20% of the total electricity sold to retail customers in California per year by December 31, 2013, 25% by December 31, 2016, and 33% by December 31, 2020. The new RPS goals apply to all electricity retailers in the State including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. This new RPS preempts the ARB's 33% Renewable Electricity Standard.
September 29, 2011	Assembly Bill 1504 (Skinner, Chapter 534, Statutes of 2010)	Forest resources and carbon sequestration. Bill requires Department of Forestry and Fire Protection and ARB to assess the capacity of its forest and rangeland regulations to meet or exceed the State's GHG goals, pursuant to AB 32.
September 30, 2008	Senate Bill 375 (Steinberg, Chapter 728, Statutes of 2008)	Sustainable Communities & Climate Protection Act of 2008 requires ARB to develop regional GHG emission reduction targets for passenger vehicles. ARB is to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations.
October 14, 2007	Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007)	Alternative Fuels and Vehicles Technologies: The bill would create the Alternative and Renewable Fuel and Vehicle Technology Program, to be administered by the Energy Commission, to provide funding to public projects to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the State's climate change policies.
August 24, 2007	Senate Bill 97 (Dutton, Chapter 187, Statutes of 2007)	Directs Governor's Office of Planning and Research (OPR) to develop CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions."

Date	Legislation	Description
July 18, 2006	Assembly Bill 1803 (Committee on Budget, Chapter 77, Statutes of 2006)	Greenhouse gas inventory transferred to ARB from the Energy Commission.
August 21, 2006	Senate Bill 1 (Murray, Chapter 132, Statutes of 2006)	California's Million Solar Roofs plan is enhanced by PUC and CEC's adoption of the California Solar Initiative. SB1 directs PUC and CEC to expand this program to more customers and requiring the State's municipal utilities to create their own solar rebate programs. This bill would require beginning January 1, 2011, a seller of new homes to offer the option of a solar energy system to all customers negotiating to purchase a new home constructed on land meeting certain criteria and to disclose certain information.
September 26, 2006	Senate Bill 107 (Simitian, Chapter 464, Statutes of 2006)	SB 107 directs California Public Utilities Commission's Renewable Energy Resources Program to increase the amount of renewable electricity (Renewable Portfolio Standard) generated per year, from 17% to an amount that equals at least 20% of the total electricity sold to retail customers in California per year by December 31, 2010.
September 27, 2006	Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006)	California Global Warming Solutions Act of 2006. This bill would require ARB to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990 to be achieved by 2020. ARB shall adopt regulations to require the reporting and verification of statewide GHG emissions and to monitor and enforce compliance with this program. AB 32 directs Climate Action Team established by the Governor to coordinate the efforts set forth under Executive Order S-3-05 to continue its role in coordinating overall climate policy.
September 12, 2002	Senate Bill 1078 (Sher, Chapter 516, Statutes of 2002)	This bill establishes the California Renewables Portfolio Standard Program, which requires electric utilities and other entities under the jurisdiction of the California Public Utilities Commission to meet 20% of their renewable power by December 31, 2017, for the purposes of increasing the diversity, reliability, public health and environmental benefits of the energy mix.
September 7, 2002	Senate Bill 812 (Sher, Chapter 423, Statutes of 2002)	This bill added forest management practices to the California Climate Action Registry members' reportable emissions actions and directed the Registry to adopt forestry procedures and protocols to monitor, estimate, calculate, report and certify carbon stores and carbon dioxide emissions that resulted from the conservation-based management of forests in California.

Date	Legislation	Description
July 22, 2002	Assembly Bill 1493 (Pavley, Chapter 200, Statutes of 2002)	The "Pavley" bill requires the registry, in consultation with ARB, to adopt procedures and protocols for the reporting and certification of reductions in greenhouse gas emissions from mobile sources for use by the ARB in granting the emission reduction credits. This bill requires the ARB to develop and adopt, by January 1, 2005, regulations that achieve the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks.
October 11, 2001	Senate Bill 527 (Sher, Chapter 769, Statutes of 2001)	This bill revises the functions and duties of the California Climate Action Registry and requires the Registry, in coordination with CEC to adopt third-party verification metrics, developing GHG emissions protocols and qualifying third- party organizations to provide technical assistance and certification of emissions baselines and inventories. SB 527 amended SB 1771 to emphasize third-party verification.
September 30, 2000	Senate Bill 1771 (Sher, Chapter 1018, Statutes of 2000)	SB 1771 establishes the creation of the non-profit organization, the California Climate Action Registry and specifies functions and responsibilities to develop a process to identify and qualify third-party organizations approved to provide technical assistance and advice in monitoring GHG emissions and setting GHG emissions baselines in coordination with CEC. Also, the bill directs the Registry to enable participating entities to voluntarily record their annual GHG emissions inventories. Also, SB 1771 directs CEC to update the State's GHG inventory from an existing 1998 report and continuing to update it every five years.
September 28, 1988	Assembly Bill 4420 (Sher, Chapter 1506, Statutes of 1988)	The California Energy Commission (CEC) was statutorily directed to prepare and maintain the inventory of GHG emissions and to study the effects of GHGs and the climate change impacts on the State's energy supply and demand, economy, environment, agriculture, and water supplies. The study also required recommendations for avoiding, reducing, and addressing related impacts - and required the CEC to coordinate the study and any research with federal, state, academic, and industry research projects.

Table Source: CARB 2022

Table 4.8-3
California Climate Change Regulations

Regulations	Description
General Plan Guidelines Update	The update addresses GHG emissions in CEQA or a Climate Action Plan. The update contains a new chapter on Climate Change. The Safety Element requires adaptation.
Cap & Trade Amendments	The September 2016 amendments to the cap-and-trade regulation mandated by SB 32 included: • Emission caps for the post-2020 program. • Post-2020 continuation of the allowance price containment reserve linking with Ontario's cap-and-trade program. • Compliance with the federal Clean Power Plan Modifications to allowance allocation. The July 2017 amendments to the cap-and-trade regulation mandated by AB 398 included: • Extension of the cap-and-trade program to 2030. • Design changes to the post-2020 carbon market, including a price ceiling, price containment points, additional limits to the number and location of offset credits, and specifics on industry assistance factors. In January 2018 the cap-and-trade program was linked with Ontario. The December 2018 amendments to the cap-and-trade regulation included: • Streamline program requirements and improve program efficiency, including the Compliance Offset Program • De-link from Ontario's cap-and-trade program • Reduce offset usage limits • Establish two price tiers and a price ceiling
Low Carbon Fuel Standard	In September 2015, the ARB re-adopted the Low Carbon Fuel Standard, to settle issues arising from lawsuits. The requirement is still a 10% reduction in the carbon intensity of transportation fuels.
Cap & Trade Offset Protocols	The ARB has adopted six protocols for offset compliance projects. In addition to the original four protocols adopted in 2011, ARB adopted the Mine Methane Capture (MMC) Projects Compliance Offset Protocol in April 2014 and Rice Cultivation Project Compliance Offset Protocol in June 2015.
Cap & Trade Link with Quebec	California linked its cap-and-trade program with Quebec's program in January 2014. Linkage allows for the use of compliance instruments from Quebec's GHG emission trading system to meet compliance obligations pursuant to the California Cap-and-Trade Regulation, and the reciprocal approval of compliance instruments issued by California to meet compliance obligations in the external trading program.
Building Energy Efficiency Standards	The Energy Commission's 2025 Building Energy Efficiency Standards, which took effect on January 1, 2023, are estimated to reduce 10 million metric tons of GHGs over the next 30 years. The 2022 Energy Code focuses on encouraging electric heat pump technology for space and water heating; establishing electric-ready requirements for single-family homes; expanding solar photovoltaic (PV) system and battery storage standards; and strengthening ventilation standards to improve indoor air quality.

Regulations	Description
Advanced Clean Cars Standard	The Advanced Clean Cars Program represents a new approach to passenger vehicles – cars and light trucks -- by combining the control of smog- causing pollutants and GHG emissions into a single coordinated package of standards known as the Low Emission Vehicle (LEV) criteria and GHG regulations. The new approach also includes efforts under the Zero-EmissionVehicle (ZEV) Program to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California. Advanced Clean Cars I was adopted in 2012, and Advanced Clean Cars II was adopted in 2022.
Appliance Efficiency Regulations	The Energy Commission's Appliance Efficiency Regulations (Title 20), combined with federal standards, set minimum efficiency levels for energy and water consumption in products, such as consumer electronics, household appliances, and plumbing equipment. The most recent amendments to the Appliance Efficiency Regulations were adopted December 9, 2020, and became effective March 16, 2021.
Cap & Trade Rulemaking Activities	A proposed California cap on GHG emissions and a market-based compliance mechanisms, including compliance offset protocols. OAL approved the rulemaking and filed it with the Secretary of State on December 13, 2011. The regulation will become effective on the January 1, 2012.
Low Carbon Fuel Standards (LCFS)	The Low Carbon Fuel Standards (LCFS), approved by ARB in April 2009, are designed to reduce the carbon intensity (CI) of transportation fuels used in California by at least 10% by the year 2020. CARB adopted amendments to the LCFS regulations in 2011, 2015, 2018, and 2019.
Renewable Portfolio Standard	Established in 2002, California's Renewables Portfolio Standard (RPS) requires electricity providers to ensure that renewable energy constitutes a specified minimum portion of their electric load. The current RPS requires investor-owned electric utilities to serve 60% of their electric load by 2030 with renewable energy.
Mandatory Commercial Recycling	This regulation addresses recycling requirements for businesses that generate 4 or more cubic yards of commercial solid waste per week and multifamily residential dwellings with 5 or more units, regardless of the amount of waste generated; local jurisdiction requirements for education, outreach, monitoring and reporting; and CalAsphalt and concrete recycling review. The regulations were approved on May 7, 2012, and were amended by SB 1018 on June 27, 2012.

Table Source: Appendix D-1.

Table 4.8-4
California Climate Change Executive Orders

Date	Executive Order	Description
May 19, 2023	N-8-23	EO-N-8-23 creates an Infrastructure Strike Team to work across state agencies to maximize federal and state funding opportunities for California innovation and infrastructure projects. EO-N-8-23 acknowledges that the state's electric grid must be modernized in order to meet its climate change goals.
September 23, 2020	N-79-20	EO-N-79-20 calls for elimination of new internal combustion passenger vehicles by 2035 and new internal combustion medium and heavy-duty trucks by 2045.

Date	Executive Order	Description
September 20, 2019	N-19-19	EO-N-19-19 requires various state agencies to leverage their existing investments, spending, or state-owned building to further California's climate goals.
July 17, 2015	B- 32-15	EO-B-32-15 directs state agencies to develop an integrated freight action plan by July 2016. Among other things, the plan calls for targets for transportation efficiency and a transition to near-zero-emission technologies.
April 29, 2015	B-30-15	EO-B-30-15 sets a GHG emissions target for 2030 at 40% below 1990 levels.
April 25, 2012	B-18-12	EO-B-18-12 calls for significant reductions in state agencies' energy purchases and GHG emissions. The Executive Order included a Green Building Action Plan, which provided additional details and specific requirements for the implementation of the Executive Order
March 23, 2012	B-16-12	EO-B-16-12 orders state agencies to facilitate the rapid commercialization of zero- emission vehicles (ZEVs). The Executive Order sets a target for the number of 1.5 million ZEVs in California by 2025. Also, the Executive Order sets as a target for 2050 a reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels.
November 14, 2008	S-13-08	EO-S-13-08 directs state agencies to plan for sea level rise and climate impacts through coordination of the State Climate Adaptation Strategy.
January 18, 2007	S-01-07	EO-S-01-07 establishes the 2020 target and Low Carbon Fuel Standard. The EO directs the Secretary of Cal/EPA as coordinator of 2020 target activities and requires the Secretary to report back to the Governor and Legislature biannually on progress toward meeting the 2020 target.
October 18, 2006	S-20-06	EO-S-20-06 establishes responsibilities and roles of the Secretary of Cal/EPA and state agencies in climate change.
April 25, 2006	S-06-06	EO-S-06-06 directs Secretary of Cal/EPA to participate in the Bio-Energy Interagency Working Group and addresses biofuels and bioenergy from renewable resources.
June 1, 2005	S-03-05	EO-S-3-05 establishes GHG emission reduction targets, creates the Climate Action Team and directs the Secretary of Cal/EPA to coordinate efforts with meeting the targets with the heads of other state agencies. The EO requires the Secretary to report back to the Governor and Legislature biannually on progress toward meeting the GHG targets, GHG impacts to California, Mitigation and Adaptation Plans.
December 14, 2004	S-20-04	EO-S-20-04 (Green Buildings) directs state agencies to reduce energy use in state owned buildings by 20% by 2015 and increase energy efficiency.

Table Source: Appendix D-1.

Climate Change Scoping Plan

AB 32 requires ARB to reduce statewide GHG emissions to 1990 levels by 2020. As part of this legislation, ARB was required to prepare and update every five years a "scoping plan" that demonstrates how the state will achieve this goal. The first Scoping Plan was adopted in 2011, and in it, local governments were described as "essential partners" in meeting the statewide goal, recommending a near-term GHG reduction level of 15 percent below 2005 to 2008 levels (depending on when a full emissions inventory is available) by 2020.

The first update to the Scoping Plan was released in 2013 and provided guidance to achieve a long-term target for the transportation sector of 80 percent below 1990 levels by 2050 as mandated by EO B-16-12. ARB adopted the 2017 Climate Change Scoping Plan in December 2017. The 2017 Scoping Plan provides economically viable and technologically feasible strategies for achieving the 2030 target established by EO B-30-15 and codified in SB 32 (40 percent below 1990 levels by 2030), and substantially advance toward the 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels.

To achieve the targets established by AB 1279, ARB adopted its most recent Climate Change Scoping Plan (2022 Scoping Plan) in December 2022. The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045. The 2022 Scoping Plan also evaluates the state's progress toward meeting the near-term target of 40 percent below 1990 levels by 2030. The 2022 Scoping Plan builds on the policies and programs of the 2017 Scoping Plan and presents new strategies to accelerate achievement of the 2030 target as needed to meet the more ambitious long-term targets of AB 1279. These new strategies focus on zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen.

The 2022 Scoping Plan aims to rapidly move towards zero-emission transportation (i.e., electrifying cars, buses, trains, and trucks), which constitutes California's single largest source of GHGs. The regulations that impact the transportation sector are adopted and enforced by CARB on vehicle manufacturers and are outside the jurisdiction and control of local governments. The 2022 Scoping Plan accelerates development of new regulations as well as amendments to strengthen regulations and programs already in place.

Included in the 2022 Scoping Plan is a set of Local Actions (2022 Scoping Plan Appendix D) aimed at providing local jurisdictions with recommendations to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. This set of Local Actions is not regulatory, is not exhaustive, and does not include everything local governments can implement to support the State's climate goals. It focuses primarily on climate action plans (CAPs) and local authority over new residential development. It includes Section 3 on evaluating plan-level and project-level alignment with the state's Climate Goals in CEQA GHG analyses. In this section, ARB identifies several recommendations and strategies that should be considered for new development in order to determine consistency with the 2022 Scoping Plan. ARB specifically states that Section 3 of Appendix D, which discusses land use plans and development projects, does not address land uses other than residential and mixed-use residential such as industrial. However, ARB plans to explore new approaches for other land use types in the future.

Cap-and Trade Program

Central to achieving the GHG reduction targets described in the previous section is the cap-and-trade program, which was introduced by ARB in 2012. Cap-and-trade is a market-based emissions trading system that establishes a declining cap on emissions over time and distributes tradeable credits under the cap. If an entity in California creates GHG emissions as part of its activities – for example, electricity generation, manufacturing, or fuel refining – it must comply with the program by either purchasing credits (or allowances) or offsets in an amount equal to that level of emissions. An allowance is a tradable credit to emit up to one MT CO_2e while an offset is a tradable compliance instrument that represents a GHG reduction or GHG removal enhancement of one MT CO_2e. Each year, the cap declines, and the number of overall credits (and therefore emissions) decreases accordingly. The use of offsets is limited to a percentage of the entity's compliance obligation, a limit that also declines over time. The cap-and-trade program applies economy-wide, setting a limit on approximately 85 percent of California GHG emissions.

The cap-and-trade program generates revenue when the allowances to emit pollution are auctioned. Some of the revenue is returned directly to electricity ratepayers, and the rest is dedicated to reducing GHG emissions by making Legislatively directed investments in California with an emphasis on programs or projects that benefit disadvantaged and low-income communities (Berkeley Law).

Table 4.8-5, "Applicability of Scoping Plan Climate Change Policies and Measures," provides a high-level summary of the climate change programs, policies and measures discussed in the 2020 Scoping Plan, including, but not limited to, those identified

specifically to achieve the 2030 target, and indicates their applicability to the proposed project.

Table 4.8-5
Applicability of Scoping Plan Climate Change Policies and Measures

Recommended Action	Applies to Proposed Project?
Implement SB 350 by 2030: • Increase the Renewables Portfolio Standard to 50 percent of retail sales by 2030 and ensure grid reliability. • Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030. • Reduce GHG emissions in the electricity sector through the implementation of the above measures and other actions as modeled in IRPs to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly- owned utilities meet GHG emissions reductions planning targets through a combination of measures as described in IRPs.	No, project will purchase grid electricity, not administrate it.
Implement Mobile Source Strategy (Cleaner Technology and Fuels): • At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025. • At least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030. • Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean Cars regulations. • Medium- and heavy-duty GHG Phase 2. • Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NO_x standard. • Last Mile Delivery: New regulation that would result in the use of low NO_x or cleaner engines and the deployment of increasing numbers of zero-	No, project vehicles are heavy-heavy duty and were not subject to heavy- duty GHG Phase 1 regulations. Thus, they would not be subject to these measures.

Recommended Action	Applies to Proposed Project?
emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10 percent in 2025 and remaining flat through 2030. • Further reduce VMT through continued implementation of SB 375 and regional Sustainable Communities Strategies; forthcoming statewide implementation of SB 743; and potential additional VMT reduction strategies not specified in the Mobile Source Strategy but included in the document "Potential VMT Reduction Strategies for Discussion."	
Implement SB 100 which increases the Renewable Portfolio Standard (RPS) to 60 percent by 2030, with new interim targets of 44 percent by 2024 and 52 percent by 2027 as well. The bill further requires that all of the state's electricity come from carbon-free resources (not only PRS-eligible ones) by 2045.	No, the project would purchase grid electricity, which would comply with RPS targets.
Increase stringency of SB 375 Sustainable Communities Strategy: • VMT per capita reduced 25 percent below 2019 levels by 2030, and 30 percent below 2019 levels by 2045	No, the project does not affect SB 375 targets. As discussed in DEIR Section 4.17, "Transportation," of this Draft EIR, although the proposed project appears to generate a high number of VMT, the actual effect of the project on a regional basis is to reduce VMT as compared to the condition in which the project does not exist. With no project and the same demand for aggregate, aggregate users within the region served by the project would need to travel farther on average to obtain aggregate.
Implement California Sustainable Freight Action Plan: • Improve freight system efficiency. • Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.	No, project does not affect whether Freight Action Plan can be implemented.
Adopt a Low Carbon Fuel Standard with a CI reduction of 18 percent.	No, project does not affect ARB's ability to adopt standards.
Implement the Short-Lived Climate Pollutant (SLCP) Strategy by 2030: • 40% reduction in methane and hydrofluorocarbon emissions below 2013 levels • 50% reduction in black carbon emissions below	No, project does not affect whether SLCP strategy can be implemented.

Recommended Action	Applies to Proposed Project?
2013 levels • 75% reduction of organic waste disposal from 2014 levels by 2025, including recovery of at least 20% of edible food for human consumption	
Implement AB 398 which extends the post-2020 Cap-and-Trade Program and doubles its stringency with an annual cap decline of 4% per year and an offset limit decline from 8% to 4%, from 2021 to 2030.	No, project does not affect CARB's ability to implement Cap-and-Trade.
Implement the California 2030 Natural and Working Lands Climate Change Implementation Plan developed in response to SB 859: • Expand the use of natural and working lands for climate mitigation and adaptation by integrating climate goals into state-funded natural and working land conservation restoration, and management programs. • Significantly increase and improve conservation, restoration, and management of California's natural and working lands, through state programs and other means, to enhance their resilience to worsening climate impacts, sequester carbon, and reduce GHGs.	No, project does not affect implementation of the Natural and Working Lands Program.
Implement the 2018 Forest Carbon Plan: • Significantly increase the pace and scale of forest and watershed improvements on nonfederal forest lands through incentives and other mechanisms. • Support Federal goals and actions to improve forest and watershed health and resiliency on Federal lands. • Prevent forest land conversions through easements and acquisitions, as well as land use planning. • Innovate solutions for wood products and biomass utilization to support ongoing sustainable forest management activities. • Protect and enhance the carbon sequestration potential and related benefits of urban forests. • Support key research, data management, and accountability needs.	No, project does not affect ability to implement the Forest Carbon Plan.
Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.	No, project does not affect whether ARB can identify and expand funding.

Table Sources: CARB 2022; Sespe Consulting Inc. 2019 (Appendix D-1).

CEQA Statutes and Guidelines Amendments

Pursuant to SB 97, Office of Planning and Research (OPR) developed proposed amendments to the CEQA Guidelines (CEQA Amendments) for the feasible mitigation of GHG emissions and their effects, which it first submitted to the Secretary of the CNRA on April 13, 2009. After a public review and comment period, on December 30, 2009, the CNRA adopted the CEQA Amendments, which became effective on March 18, 2010.

The CEQA Amendments for Greenhouse Gas Emissions state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Amendments note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance-based standards." Section 15064.4(b) provides that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent a project may increase or reduce GHG emissions as compared to the environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

In addition, Section 15064.7(c) of the CEQA Amendments specifies that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." Similarly, the revision to CEQA Appendix G, "Environmental Checklist Form," which is often used as a basis for lead agencies' selection of significance thresholds, does not prescribe specific thresholds. Rather, Appendix G asks whether the project would conflict with a plan, policy or regulation adopted to reduce GHG emissions; or generate GHG emissions that would significantly affect the environment, indicating that the determination of what is a significant effect on the environment should be left to the lead agency.

Accordingly, the CEQA Amendments do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Amendments emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of

significance consistent with the manner in which other impact areas are handled in CEQA.

The CEQA Amendments indicate that lead agencies should consider all feasible means, supported by substantial evidence and subject to monitoring and reporting, of mitigating the significant effects of GHG emissions. As pertinent to the project, these potential mitigation measures, set forth in Section 15126.4(c), may include (1) measures in an existing plan or mitigation program for the reduction of GHG emissions that are required as part of the lead agency's decision; (2) reductions in GHG emissions resulting from a project through implementation of project design features; (3) off-site measures, including offsets, to mitigate a project's emissions; and (4) carbon sequestration measures.

Among other things, the CNRA noted in its Public Notice for these changes that impacts of GHG emissions should focus on the cumulative impact on climate change. The Public Notice states:

> *While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable.*

Thus, the CEQA Amendments continue to make clear that the significance of GHG emissions is most appropriately considered on a cumulative level.

4.8.2.3 Local

San Joaquin Valley Air Pollution Control District

San Joaquin Valley Air Pollution Control District (Air District) GHG policy is established in the *District Policy Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* (Air District 2009). The document outlines a methodology to determine if a project meets the Best Performance Standards for GHG emissions. The document states, "[p]rojects implementing [Best Performance Standards] would be determined to have a less than significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions". When serving as the lead agency, the Air District requires stationary sources that do not comply with Best Performance Standards to demonstrate GHG reductions of 29 percent as compared to Business-as-Usual. Business-as-Usual is defined by the Air District as "The emissions for a type of equipment or operation within an identified class

and category projected for the year 2020, assuming no change in GHG emissions per unit of activity as established for the baseline period".

This policy, however, does not apply to the proposed project for a number of reasons. In addition to the fact Fresno County is the lead agency for this project, ARB regulations adopted in 2010 established a cap-and-trade program for the largest sources of GHG emissions in the state. Included in cap-and-trade are electrical power and fuels that are utilized by the proposed project.

Fresno County General Plan

In February 2024, Fresno County updated its General Plan, where the Fresno County Climate Change Vulnerability Assessment identified and mapped communities most at risk to climate change hazards in unincorporated Fresno County (see Figure 19 Social Sensitivity in Fresno County in Appendix C [to the General Plan]).

The *Fresno County General Plan* (Fresno County 2024) Health and Safety Element includes the following policies related to GHG emissions and climate change that apply to the proposed project:

Goal HS-C: To minimize the risk of loss of life, injury, and damage resulting from flood hazards.

Policy HS-C.6: The County shall encourage, as applicable, expansion of stormwater and flood protection infrastructure capacity in order to accommodate changes in precipitation and extreme weather events including establishment or expansion of recharge basins.

Goal HS-G: To improve the sustainability and resiliency of the County through continued efforts to reduce the causes of and adopt to climate change.

Policy HS-G.1: The County shall support plans, standards, regulation, incentives, and investments based on sound science to reduce the impacts of climate change.

Policy HS-G.3: The County shall continue to collaborate with Federal, State, regional, and local agencies, business and property owners, and residents to reduce generation of GHG and other emissions that contribute to climate change and effectively implement climate change adaption policies and programs.

Policy HS-G.9: The County shall identify and protect locations where native species may shift or lose habitat due to climate change impacts (e.g.,

extreme heat, wildfire and landslides) and consider ecosystem shift when updating conservation and land use plans.

Policy HS-G.13: The County shall undertake a countywide Climate Action Plan (CAP) within two years of the adoption of General Plan Amendment No. 529 (General Plan Review) with the objective of meeting a GHG emissions reduction trajectory consistent with State law (currently codified in Health and Safety Code Section 38566 et seq. [Senate Bill 32] and Executive Order B-55-18).

Fresno Council of Governments Regional Transportation Plan/Sustainable Communities Strategy

The Regional Transportation Plan/Sustainable Communities Strategy (Fresno Council of Governments 2021) develops a regional transportation network that is environmentally sensitive and reduces GHG emissions. New transportation facilities must avoid or fully mitigate all significant impacts on environmentally sensitive areas and natural resources such as minimizing loss of farmland. Increased transportation and facility design is encouraged, along with infill development near existing public transportation, which is intended to reduce vehicle miles traveled (VMT) and the associated GHGs from those mobile emissions. This plan is not applicable to the proposed project because the proposed project does involve changes to existing transportation facilities or development of new transportation facilities.

4.8.3 Significance Thresholds and Analysis Methodology

4.8.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to GHG emissions if it would:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

4.8.3.2 Significance Thresholds

South Coast Air Quality Management District (SCAQMD) methodology was used to evaluate whether a project would generate GHG emissions that may have a significant impact on the environment (SCAQMD 2008). SCAQMD methodology was used because San Joaquin Air District methodology is out-of-date and does not appropriately address emissions covered by the Cap-and-Trade Program. Based on SCAQMD methodology (SCAQMD 2014, cited in Sespe 2019), emissions from sectors that are required to

participate in the Cap-and-Trade Program administered by CARB are excluded from the GHG analysis. These sectors include electricity and transportation fuel, which are the energy sources that would be used by all of the proposed project mining, processing, and production operations, with the exception of the proposed asphalt plant, which would be powered by natural gas. For energy sources that are not subject to the Cap-and-Trade Program (i.e., the natural gas-fueled asphalt plant), the screening threshold established by SCAQMD methodology is 10,000 metric tons of CO_{2e} (MT CO_{2e}) per year. In this analysis, GHG emissions from sources not subject to the Cap-and-Trade Program are considered less than significant when:

1) emissions sources are less than 10,000 MT CO_{2e} per year; and
2) each emission source complies with all applicable and feasible best performance standards developed by the Air District (Air District 2012).

4.8.3.3 Analysis Methodology

GHG emissions and global climate change represent cumulative impacts. Maximum annual GHG emissions from proposed construction activities and mining operations were estimated for informational purposes. The general analysis approach was to estimate the total increase in GHG emissions from proposed construction and mining operations activities relative to emissions from existing construction and mining operations activities. Under existing conditions, there are no construction activities on the project site, therefore there are no existing GHG emissions from construction.

The analysis also estimates the increase in GHG emissions from fuels used on the project sites that would not be subject to the Cap-and-Trade Program.

Because no single project could generate enough GHG emissions to noticeably change the global average temperature, the analysis of the proposed project's potential climate change impacts focuses on the project's contribution to GHG emissions in a cumulative context.

Project Design Features and Assumptions

Table 4.8-6, "Rockfield Modification Project Components of Air Quality and Greenhouse Gas Modelling," summarizes the project features incorporated into the Air Quality Assessment analysis, which are the same as those described in Section 4.3, "Air Quality."

Table 4.8-6
Rockfield Modification Project Components of Air Quality and Greenhouse Gas Modelling

Activity	Description
CONSTRUCTION	
Aggregates Processing Construction	Construction of aggregates processing plant at the Quarry Site. Expectedschedule of 5 days.
Grading	Expected schedule of 5 days.
Paving	Paving of approximately one mile of road. Expectedschedule of 10 days.
Site Preparation	Clearing of Quarry Site and site preparation. Expected schedule of 10 days.
RESOURCE RECOVERY AND PROCESSING	
Mining Method	Addition of hard rock mining to Quarry Site activities. Addition of primary crusher in pit. Increased use of excavator and dozer operations, in addition to excavation by hydraulic shovel or front-end loader. Addition of blasting will berequired.
Processing	Extracted resources at the Quarry Site will be processed onsite rather than beingtransported to the Plant Site for processing.
Estimated Annual Aggregates Production	Increase from 1,374,272 tons per year to 3,000,000 tons per year
Estimated Annual ReadyMix Production	Increase from 189,550 cubic yards per year to 300,000 cubic yards per year
Estimated Annual RecyclePlant Production	Increase from 25,000 tons per year to 200,000 tons per year
Estimated Annual Asphalt Plant Production	Increase from 0 tons per year to 500,000 tons per year
Hours of Operation	6 days per week, Monday through Saturday (For health risk assessment, modeledconservatively as 7 days per week, 12 hours per day. For criteria pollutant emissions, modeled based on maximum hour and day, by activity levels.)

Table Source: Appendix D-1.

The GHG emissions estimates were completed using the same methodology summarized in subsection 4.3.4.3, "Analysis Methodology," of Section 4.3, "Air Quality," of this Draft EIR. However, GHG emissions estimates also included estimates of GHG emissions from project use of electricity. Detailed methodology is provided in the Air Quality Assessment (Appendix D-1) and the associated Addendum (Appendix D-2).

Baseline GHG Emissions

Baseline emissions were determined based on historical production records for the year 1998 and are presented in Table 4.8-7, "Baseline GHG Emissions."

Table 4.8-7
Baseline GHG Emissions

Source	CO_{2e} Emissions (Metric Tons per Year)
Aggregates Plant	2,581
Ready Mix Plant	261
Asphalt Plant	0
Recycle Plant	35
Stockpiles	0
Off-road Engines	4,748
On-road Vehicles (onsite)	289
On-road Vehicles (offsite)	5,743
Quarrying	0
Blasting	0
Material Handling	0
Employee Trips	291
Total	13,948

Table Source: Appendix D-1.
Table Notes: CO_{2e} = carbon dioxide equivalent

Proposed Project GHG Emissions

Construction Phase

CalEEMod was used to estimate construction phase emissions. Project construction is expected to take place for 10 days and would emit approximately 49 MT CO_2e.

Operation Phase

Table 4.8-8, "Maximum Annual Operation Phase GHG Emissions," summarizes the maximum annual estimated GHG emissions that would be emitted from the operation of the proposed project.

Table 4.8-8
Maximum Annual Operation Phase GHG Emissions

Source	CO_2e Emissions (Metric Tons per Year)
Aggregates Plant	5,489
Ready Mix Plant	413
Asphalt Plant	7,549
Recycle Plant	281
Stockpiles	0
Off-road Engines	8,471
On-road Vehicles (onsite)	228
On-road Vehicles (offsite)	9,207
Quarrying	0

Source	CO_2e Emissions (Metric Tons per Year)
Blasting	0
Material Handling	0
Employee Trips	174
Total:	31,812

Table Source: Appendix D-1.
Table Notes: CO_2e = carbon dioxide equivalent

4.8.4 Project Impacts and Mitigation Measures

Impact 4.8-1: Generate GHG Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment

The maximum annual estimated increase in emissions relative to baseline conditions from the construction and operation of the proposed project are presented for informational purposes in Table 4.8-9, "Proposed Project GHG Emissions Including Cap-and-Trade Program Sources." Phase 1 and Phase 2 operations under the proposed project would emit GHGs from electricity use, fuel burned in vehicle and construction and mining equipment engines, and electricity and fuel burned in stationary facilities (i.e., natural gas used by hot-mix asphalt plant and diesel fuel used by aggregate processing plant, ready-mix cement plant, and recycling plant). During the reclamation phase of the proposed project, the project sites would be converted to open space land use which would require minimal use of fuels and would not be a substantial source of GHG emissions.

As shown in Table 4.8-9, the maximum annual increase GHG emissions generated by the proposed project exceeds the 10,000 MT CO_2e per year screening threshold. However, electricity and transportation fuel suppliers and importers are required to report emissions under the Cap-and-Trade Program administered by CARB, which is designed to reduce GHG emissions as needed to achieve emissions reductions described in related planning documents which primarily consists of the Scoping Plan. Thus, the emissions reductions from electricity and transportation fuel usage would occur at a level in the energy supply chain above that as compared to the proposed project, which would have no choice but to use fuel and electricity having GHG intensities that are consistent with the Scoping Plan.

Table 4.8-9
Proposed Project GHG Emissions Including Cap-and-Trade Program Sources

Activity	CO_2e (MT/yr)
Baseline Condition	13,948
Construction Phase (Maximum Year)	49
Operation Phase	31,812
Project Emissions Including Cap-and-Trade Program Sources (Operation Phase minus Baseline Condition)[1]	17,864

Table Source: Appendix D-2
Table Notes:
1. Sources of emissions subject to the Cap-and-Trade Program consist of electricity and transportation fuel usage that would occur at a level in the energy supply chain above the proposed project, and which therefore would have no choice but to use fuel and electricity having GHG intensities that are consistent with the Scoping Plan.

CO_2e = carbon dioxide equivalent.
MT/year = metric tons per year.

As described in Chapter 2, "Project Description," of this Draft EIR, the proposed project would involve the development of a new hot-mix asphalt plant that would be fueled by natural gas. Specifically, natural gas would be used to fuel the asphalt plant dryer and oil heater. The emissions from this natural-gas fueled facility are not covered by the Cap-and-Trade Program. Table 4.8-10, "GHG Emissions from Project Sources Not Included in Cap-and-Trade Program," provides the estimated maximum annual emissions resulting from operation of the proposed asphalt plant.

T able 4.8-10
GHG Emissions from Project Sources Not Included in Cap-and-Trade Program

Activity	CO2e (MT/yr)
Operation Phase (Stationary Combustion in Asphalt Dryer)	7,598
Operation Phase (Stationary Combustion in Asphalt Oil Heater)	910
Baseline Condition	0
Project Impact (Operation Phase Minus Baseline Condition)	8,508
Screening Threshold	10,000
Project Impact Exceeds Screening Criteria?	No

Table Source: Appendix D-2; SCAQMD 2014.
Table Notes: CO_2e = carbon dioxide equivalent.
MT/year = metric tons per year.

As shown in Table 4.8-9 above, GHG emissions from the asphalt plant would be less than the screening threshold. The significance thresholds also require that sources not subject to the Cap-and-Trade Program implement feasible best performance standards. There is one draft Air District best performance standard relevant to the proposed asphalt plant that has not been adopted and is provided for disclosure purposes. The Air District

developed this draft best performance standard for new continuous mix asphalt dryers that would result in GHG emissions reductions of between 13.1 and 17.2 percent less than asphalt plants that do not implement this best performance standard. The best performance standard is:

- Non-Caltrans projects: Warm mix asphalt with premium efficiency electric motors and exhaust fan operated with a variable frequency speed control (24.1 lb-CO_{2e} or equivalent).
- Caltrans project: Separate dryer drum and mixing chamber and the use of heat from the dryer drum to mix aggregate and binder (3 percent decrease in fuel consumption, 9 percent increase in production) with premium efficiency electric motors and exhaust fan operated with a variable frequency speed control (25.3 lb-CO_{2e} or equivalent) (Air District 2010).

Certain features in the draft best performance standard are not feasible and this is the reason why the document has remained draft since it was published 13 years ago. For instance, the mix design is not always under control of the operator. Thus, the warm-mix only feature is infeasible. Feasible items from the best performance standard are recommended in Mitigation Measure 4.8-1.

In summary, each of the facilities and operations under the proposed project, with the exception of the asphalt plant, would rely on an energy source subject to the Cap-and-Trade Program. GHG emissions from the asphalt plant would be less than the SCAQMD GHG screening criteria. In addition, the significance thresholds also require that sources not subject to the Cap-and-Trade Program implement feasible best performance standards. Mitigation Measure 4.8-1 would require implementation of all feasible features in the Air District best performance standards. For these reasons, the potential of the proposed project to result in a cumulatively considerable contribution to global climate change would be less than significant with mitigation.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.8-1: *Asphalt Plant Performance Standards*

The asphalt plant dryer drum and mixing chamber shall be separated so that dryer exhaust gases do not contact liquid asphalt and premium efficiency electric motors with exhaust fan motors shall be equipped with variable frequency speed control. These specifications shall be shown on project plans and submitted to the San Joaquin Air Pollution Control District as part of the application for Authority to Construction the proposed asphalt plant. Air district staff will verify implementation of this measure as part of the permit review process.

Level of Significance After Mitigation: Less than significant.

Impact 4.8-2: Consistency With Applicable GHG Plans, Policies, or Regulations.

Legislation (Table 4.8-2) and regulations (Table 4.8-3) are summarized in Section 4.8.2, above. One of the functions of the AB 32 Scoping Plan, which does contain policies, is to inventory and summarize the various regulations/laws that apply to emitters of GHGs. The Scoping Plan is also informed by Executive Orders (Table 4.8-4) that have been regularly incorporated with each iteration of the Scoping Plan. Thus, consistency with the Scoping Plan is consistent with the laws, regulations, and executive orders listed in Tables 4.8-2, 4.8-3, and 4.8-4, above.

The proposed project's consistency with the three types of policies (local, Scoping Plan, and Executive Order B-30-15, which is the next Scoping Plan GHG target [40 percent less than 1990 levels in 2030]) is summarized as follows:

- **A Local Jurisdiction's Qualified Climate Action Plan or GHG Reduction Plan:** As detailed in Section 4.8.2.3, above, no local climate action or GHG reduction plans apply to the proposed project.
- **AB 32 Scoping Plan:** As described in Section 4.8.2.2, above, AB 32 requires that the ARB adopt regulations to require the reporting and verification of statewide GHG emissions and monitor and enforce compliance with the program. The Scoping Plan is the most recent GHG policy document issued by ARB in accordance with AB 32. Although the Air District has not formally approved GHG performance measures, staff has considered measures such as a Percent Emissions Reduction Target which could be set at the overall level of reduction required by the Scoping Plan, or the level of reduction required from the industrial sector/source category by the AB 32 Scoping Plan. Currently, in accordance with AB 32, the SCAQMD has set an interim GHG screening threshold of 10,000 $MTCO_{2e}$ per year for industrial projects. As shown in Table 4.8-9, GHG emissions for industrial uses proposed by the project that would use an energy source not subject to the Cap-and-Trade Program (i.e., the asphalt plant) would be approximately 8,508 MT CO_{2e} per year, which is below the screening threshold. As such, the proposed project is consistent with the emissions reductions targets outlined in the Scoping Plan. In addition, as summarized in Table 4.8-5, the project would not conflict with the climate change policies and measures discussed in the Scoping Plan.
- **Executive Order B-30-15 Goals:** The proposed is consistent with the Executive Order B-30-15 goals which apply to the fuel and electricity sectors as a whole. The fuels and electricity used by the proposed project facilities, equipment, and vehicles would be subject to the Cap-and-Trade Program as well as the Scoping

Plan and related control measures (e.g., renewable energy portfolio, low carbon fuel standard) that are applied higher up in the energy supply chain. There is no plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs specifically from mining projects. Thus, the sources that are affected by such plans and policies would be consistent with those plans, policies, and/or regulations by virtue of using fuels and electricity that has been produced for consumption within California.

As described under Impact 4.8-1, during the reclamation phase of the proposed project, the project sites would be converted to open space land use, which would require minimal use of fuels and would not be a substantial source of GHG emissions, and therefore would not conflict with any GHG plans, policies, or regulations.

In summary, the proposed project would comply with all applicable GHG impact plans, policies, and regulations. This impact would be less than significant.

Level of Significance: Less than significant.

Mitigation Measures: None required.

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4.9—HAZARDS AND HAZARDOUS MATERIALS

This section of the Draft EIR describes the hazards and hazardous materials setting in the vicinity of the Quarry Site and Plant Site (collectively "project sites"); summarizes applicable jurisdictional laws and regulations associated with hazards and hazardous materials; and presents the significance criteria and thresholds for the evaluation of potential impacts. This section then describes analysis methodologies and identifies the potential impacts of the proposed project related to hazards and hazardous materials. Measures to mitigate potential impacts are recommended, as appropriate.

The information in this section is based on Applicant-prepared studies, peer review comments, and publicly available sources. The Applicant-prepared studies used are:

- *Blasting Protocols, CEMEX Rockfield Quarry, Fresno, California.* Prepared by Vibra-Tech. September 8, 2021. (Appendix H-6, "Blasting Protocols")

The peer review comments are:

- *Blast-Induced Vibration Impact Peer Review of the Quarry Site, Proposed Cemex Rockfield Quarry Modification Project, Fresno County, California*. Prepared by Golder Associates, Inc. (Golder). September 11, 2020. (Appendix H-7, "Blast Impact Analysis Peer Review")

4.9.1 Environmental Setting

4.9.1.1 Historic and Existing Land Uses

Plant Site

The Plant Site contains the Rockfield Quarry gravel mining plant that has been in operation since 1924. The existing land uses on the Plant Site consist of aggregate processing and production, as shown on Figure 2-3, "Plant Site Existing Conditions," in Chapter 2, "Project Description," of this Draft EIR. The Plant Site is relatively flat and slopes gently to the west; surface elevations range from 300 to 320 feet above mean sea level (msl). The entire 138.5-acre Plant Site is disturbed by mining and processing operations with the exception of an approximately 4-acre area within the required 50-foot setback from North Friant Road. Approximately 82 acres of the Plant Site have been heavily disturbed by current and historic mining operations and approximately 36 acres have been developed as silt ponds that settle out silts from the wash water used by the aggregate plant and that allow water to be recycled back to the aggregate plant as wash water. Various large stockpiles and perimeter berms are also found throughout the site.

The Plant Site currently contains the following processing and production facilities:

- **Aggregate plant**—Located at the center of the site. Supporting equipment includes front-end loaders; water truck; conveyors; screens; screening towers; crushers, washers; sand cyclones; sand screws; sand/aggregate truck loadout bins; pollution control equipment; dewatering equipment and tanks; recycle water pumps; computer control tower; maintenance shop; quality control lab; fuel tanks; and other accessory equipment and buildings.
- **Ready-mix concrete plant**—Located at the northwest portion of the site. Supporting equipment includes front-end loaders; concrete mixer trucks; ground aggregate storage bins; conveyors; batch plant; cement silos; pollution control equipment; storage buildings; mixer truck maintenance shop; batch office; and other accessory equipment.
- **Diesel-powered, portable recycle plant**—Locations vary across the site. Supporting equipment includes front-loaders,crushers, screens, and conveyors.
- **Diesel-powered asphalt plant (removed)**—An asphalt plant was located at the southern portion of the site. It was active until about 2009 and has since been removed.

The Plant Site also contains a ready-mix maintenance shop/office (near the site entrance), a scale house/office/quality control lab (near center of site), and an aggregate maintenance shop (center of the site).

Construction aggregates produced by the aggregate processing plant are stockpiled on the Plant Site. Cement for use in producing ready-mix concrete is delivered and stored in cement silos at the concrete plant. Asphaltic oil for use by the previous diesel-powered asphalt plant was delivered and stored in tanks in containment.

Diesel fuel for use by mobile equipment is delivered and stored in a tank in containment. Gasoline for use by pickup trucks is delivered and stored in a tank in containment. Products needed to service the mobile equipment such as gear and lube oil, transmission fluid and various other products are delivered and stored at or near the maintenance shops. Waste from the facility is stored in designated containers adjacent to the shop in the containment area and/or within the shops and is recycled or disposed of in accordance with local, state, and federal safety regulations. All materials are stored in accordance with a Hazardous Materials Business Plan and a Spill Prevention Control and Countermeasure Plan.

Quarry Site

The Quarry Site is the primary source of aggregate for the Rockfield Quarry mining operations. Mining at the Quarry Site first occurred in 1913 and continued through the 1920s. Mining resumed again in the 1980s and has been ongoing for over 40 years.

The existing land uses on the Quarry Site consist of aggregate mining as shown on Figure 2-4, "Quarry Site Existing Conditions," in Chapter 2. The 352.4-acre Quarry Site generally slopes to the south. Surface elevations range from approximately 250 to 330 feet msl. Over 90% of the Quarry Site has been partially disturbed by the current and historical mining operations. Undisturbed areas include the required 50-foot setback from North Friant Road and the required 200-foot setback from the San Joaquin River. Screening berms are located along North Friant Road and along the southwest boundary. Vegetated topsoil stockpiles are located in various locations along the western perimeter and provide additional screening. Various internal haul roads run throughout the Quarry Site.

The Quarry Site currently does not contain any processing or production facilities. Consequently, there are no hazardous materials stored on the site.

4.9.1.2 Soil and Groundwater Contamination Setting

There are no known areas of soil and groundwater contamination within or near the Plant Site or Quarry Site. In California, the status and location of hazardous materials release sites under regulatory oversight for assessment and/or remediation actions are reported on the State Water Resources Control Board (SWRCB) GeoTracker database and the Department of Toxic Substances Control (DTSC) EnviroStor database. The SWRCB GeoTracker database includes leaking underground storage tanks (LUSTs) and Cleanup Program sites. An active LUST site is undergoing investigation and/or cleanup due to the unauthorized release from an underground storage tank (UST). In addition to known LUST sites, it is not uncommon for older USTs to have been abandoned in place with no documentation of location or abandonment technique. Cleanup Program sites are undergoing investigation and/or cleanup due to spills and leaks of hazardous materials that were used by various businesses and industries (e.g., dry cleaners), which can include, but are not limited to, heavy metals, solvents, and flammable materials. The DTSC EnviroStor database includes properties such as former industrial sites, school sites, military bases, small businesses, and landfills that are contaminated, or believed to be contaminated, with some level of toxic substances.

A review of the SWRCB GeoTracker database indicates that the nearest recorded hazardous materials release to the Rockfield Quarry occurred at a LUST site at the entrance to Lost Lake Park, approximately 1 mile north of the Quarry Site. The LUST case is closed (SWRCB 2021). A review of the DTSC EnviroStor database indicates that the

nearest hazardous materials release site to the Rockfield Quarry is a rifle range located more than 6 miles southeast of the Plant Site, which is currently undergoing investigation (DTSC 2021).

The provisions of California Government Code Section 65962.5 require the State Water Board, DTSC, California Department of Health Services, and California Department of Resources Recycling and Recovery to submit information to the California Environmental Protection Agency pertaining to sites that were associated with solid waste disposal, hazardous waste disposal, and/or hazardous materials releases. The compilation of hazardous materials release sites that meet criteria specified in Section 65962.5 of the California Government Code is known as the Cortese List. Based on the review of SWRCB Geotracker and DTSC EnviroStor records, the Rockfield Quarry does not contain any hazardous materials release sites on the Cortese List.

4.9.1.3 Lead, Asbestos, and Other Hazardous Building Materials

Prior to 1978, lead compounds were commonly used in exterior and interior paints. Lead is a suspected human carcinogen (i.e., may cause cancer), a known teratogen (i.e., can cause birth defects), and a reproductive toxin (i.e., can cause sterility). Prior to the 1980s, building materials often contained asbestos fibers, which are a known human carcinogen. Due to its strength and fire resistance, asbestos was frequently incorporated into insulation, roofing, siding, textured paint, and patching compounds used on wall and ceiling joints, vinyl floor tiles and adhesives, and water and steam pipes.

Polychlorinated biphenyls (PCBs) were used as coolants and lubricants in transformers, capacitors, heating/cooling equipment, and other electrical equipment, and were also used as plasticizers in paints, plastics, rubber products, and caulking. Although manufacturing of PCBs has been banned in the United States since 1979, they may still be found in older electrical equipment and other building materials such as light ballasts and caulking. PCBs have been demonstrated to cause cancer and a variety of other adverse health effects in animals, including effects on the immune system, reproductive system, nervous system, and endocrine system. PCBs or PCB-contaminated items require proper off-site transport and disposal at a facility that can accept such wastes, in accordance with the Toxic Substances Control Act of 1976 and other federal and state regulations. PCBs in manufactured materials such as caulking may also move directly into adjoining materials, particularly porous materials such as wood, concrete, and other types of masonry (EPA 2015a).

The EPA believes that there was potential widespread use of PCB-containing building materials in buildings built or renovated between about 1950 and 1979. Prior to removal of caulk and other building materials, the EPA recommends PCB testing to determine

what protections are needed during removal and to determine proper disposal requirements (EPA 2015b).

Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials (including mercury, a metal) are regulated as "universal wastes" by the State of California. Universal waste regulations allow common, low hazard wastes to be managed under less stringent requirements than other hazardous wastes. Management of other hazardous wastes is governed by DTSC hazardous waste rules.

4.9.1.4 Wildland Fire Hazard

Fire environments are dynamic systems and are influenced by many types of environmental factors and site characteristics. Fires can occur in any environment where conditions are conducive to ignition and fire movement. The three major components of fire environment are vegetation (fuels), climate, and topography. The state of each of these components and their interactions with each other determines the potential characteristics and behavior of a wildfire.

In California, responsibility for wildfire prevention and suppression is shared by federal, state and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas. The State of California has determined that some non-federal lands in unincorporated areas with watershed value are of statewide interest and have classified those lands as State Responsibility Areas, which are managed by the California Department of Forestry and Fire Protection (CAL FIRE). All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas. While nearly all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code [PRC] 4201-4204 and California Government Code 51175-89). Consistent with this requirement, CAL FIRE maps fire hazards based on zones, referred to as Fire Hazard Severity Zones. CAL FIRE maps three SRA zones: 1) Moderate Fire Hazard Severity Zones; 2) High Fire Hazard Severity Zones; and 3) Very High Fire Hazard Severity Zones. Only the Very High Fire Hazard Severity Zones are mapped for the Local Responsibility Area. Each of the zones influence how people construct buildings and protect property to reduce risk associated with wildland fires. Under state regulations, areas within very high fire hazard risk zones must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas.

Understanding the fire environment on and adjacent to the Rockfield Quarry is necessary to understand the potential for fire within and around the Plant Site and Quarry Site. As shown on Figure 4.20-1, "Fire Hazard Severity Zones," in Section 4.20, "Wildfire," of this Draft EIR, the areas to the east of the San Joaquin River and west of North Friant Road, which include the Plant Site and Quarry Site, are mapped as a Local Responsibility Area, but not within a Very High Fire Hazard Severity Zone (CAL FIRE 2007). The area immediately to the east of North Friant Road is mapped within a Moderate Fire Hazard Severity Zone in a State Responsibility Area (CAL FIRE 2007).

4.9.2 Regulatory Setting

4.9.2.1 Federal

The primary federal agencies with responsibility for hazardous materials management include the U.S. Environmental Protection Agency (EPA), U.S. Department of Labor Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (DOT). Federal laws governing the transport, storage, and use of hazardous materials include the following:

- Resources Conservation and Recovery Act (RCRA): hazardous waste management;
- Hazardous and Solid Waste Amendments Act (HSWA): hazardous waste management;
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): cleanup of contamination;
- Superfund Amendments and Reauthorization Act (SARA): cleanup of contamination;
- Emergency Planning and Community Right-to-Know (SARA Title III): business inventories and emergency response planning;
- Toxic Substances Control Act (TSCA): tracks and screens industrial chemicals; and
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA): controls pesticide distribution, sale, and use.

Specific requirements for implementation of these statutes are codified in CFR Title 40. Additional regulations that apply to workplace safety and transportation of hazardous materials are contained in CFR Titles 29 and 49, respectively.

4.9.2.2 State

Hazardous Materials Management

The California Environmental Protection Agency (Cal/EPA) has established regulations governing the use of hazardous materials in the state. Within Cal/EPA, the DTSC has primary hazardous materials regulatory responsibility, but can delegate enforcement responsibilities to local jurisdictions that enter into agreements with DTSC, for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Law (HWCL). State regulations applicable to hazardous materials are contained primarily in Title 22 of the CCR. Title 26 of the CCR is a compilation of those chapters or titles of the CCR that are applicable to hazardous materials management.

Also, within the "umbrella" of CalEPA, the California Department of Resources Recycling and Recovery (CalRecycle) is responsible for protecting the public's health and safety and the environment through management of the solid waste generated in California. Solid waste regulations are generally enforced through local enforcement agencies (usually county agencies). The IWMB works in partnership with local government, industry, and the public to reduce waste disposal and ensure environmentally safe landfills. Solid waste management provisions are outlined in the PRC Division 30.

The California Highway Patrol (CHP) and Caltrans are the enforcement agencies for hazardous materials transportation regulations. California OSHA (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state. Cal/OSHA standards are more stringent than federal OSHA regulations and are presented in Title 8 of the CCR.

The California Office of Emergency Services (CalOES) is the state office responsible for establishing emergency response and spill notification plans related to hazardous materials accidents. In addition, CalOES regulates businesses by requiring specific businesses to prepare an inventory of hazardous materials, and to prepare risk management plans through the California Accidental Release Prevention Program (Title 19 of the CCR).

The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) regulate surface and groundwater quality according to the provisions of state and federal legislation including the Porter-Cologne Water Quality Act, the Toxic Pits Cleanup Act, Underground Tank Law, and Clean Water Act. Generally, all petroleum-related sites are handled by the RWQCBs, and all underground tank sites are managed by county environmental management agencies. The project sites

are located within the jurisdiction of the Central Valley RWQCB (Region 5). The RWQCBs can delegate responsibilities, such as underground tank permitting and monitoring, to local jurisdictions.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

In January 1996, Cal/EPA adopted regulations implementing a "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program). The six program elements of the Unified Program are hazardous waste generators and hazardous waste on-site treatment, underground storage tanks, aboveground storage tanks, hazardous material release response plans and inventories, risk management and prevention programs, and Unified Fire Code hazardous materials management plans and inventories.

The Unified Program is implemented at the local level by a local agency – the Certified Unified Program Agency (CUPA), which in Fresno County is the Fresno County Environmental Health Department. The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction.

The Quarry is both a hazardous waste generator and maintains aboveground storage tanks and containers and is, thus, regulated by the Fresno County Environmental Health Department (Fresno County 2023).

Emergency Response to Hazardous Materials Incidents

To coordinate emergency services provided by local, state, and federal agencies, California has developed an Emergency Response Plan pursuant to the California Emergency Services Act (Government Code Section 8550 et seq.). The Plan is administered by Cal/OES. Local agencies are required to develop area plans for an organized response to releases of hazardous materials that are dependent on Business Plans submitted by handlers of hazardous materials and waste within that agency's area. Pursuant to California Health and Safety Code Section 25503(a) and California Code of Regulations Title 19, Division 5, Chapter 1, Section 5030.1, any business handling hazardous material must establish and implement a Hazardous Materials Business Plan. These Business Plans are then submitted to the local administering agency.

Above-Ground Storage Tanks

Assembly Bill 1130 (AB 1130), effective January 1, 2008, authorized the administration and implementation of the Aboveground Petroleum Storage Act (APSA) to the local CUPA. APSA requires owners or operators of aboveground petroleum storage tanks or other containers with a total storage capacity greater than 1,320 gallons to file a tank facility statement, to develop and implement a Spill Prevention Control and

Countermeasure (SPCC) plan, and to pay an annual fee. An SPCC plan must describe the locations of all aboveground petroleum storage tanks and information on the type of oil in each container and its storage capacity; the appropriate procedures for the routine handling of products; the discharge or drainage controls in place, such as secondary containment; countermeasures for discharge discovery, response, and cleanup; and methods of disposal of recovered material in accordance with applicable legal requirements. The purpose of the APSA program is to protect the environment from aboveground petroleum storage tank spills or releases. By November 10, 2010, regulated APSA facilities must prepare and implement SPCC plans that describe procedures and equipment to be used to prevent oil discharges.

There are numerous aboveground storage tanks and other containers of various sizes and capacities on both the Plant Site and Quarry Site, including aboveground petroleum storage with a total capacity greater than 1,320 gallons (CERS 2023). Thus, the facility is subject to the requirements of APSA. Accordingly, the Applicant has submitted to the Fresno County Environmental Health Department an APSA Facility Statement, Hazardous Materials Inventory with Site Map, and an Emergency Response/Contingency Plan and Employee Training Plan. These documents are current with the most recent versions submitted to the County in February 2023 (CERS 2023).

Lead-Based Paint Regulations

The lead-based paint regulations (17 CCR Section 35001 et seq.) address requirements for the removal of lead-based paint during demolition of existing structures. Some sections of the lead-based paint regulation apply only to public and residential buildings, as defined in the standard. However, Section 35043, the definition of "Presumed Lead-Based Paint," and Section 36050, "Lead-Safe Work Practices," apply to all structures and locations in California. In accordance with these sections, all paint on California structures built before 1978 is required to be treated as lead-based paint unless it is sampled and proven otherwise. The assessment and removal of all paint on California lead-based paint materials must be conducted by a Certified Lead Supervisor or Certified Lead Works, as defined by the lead-based paint regulations and in accordance with the procedures specified in the *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* (U.S. Department of Housing and Urban Development 2012). The removal must be in a manner that does not result in contamination of non-work areas with lead-contaminated dust, lead-contaminated soil, or lead-based paint debris, and in accordance with an abatement plan prepared by a certified lead supervisor, certified lead project monitor, or certified lead project designer. An Abatement of Lead Hazards Notification must be submitted to the California Department of Public Health.

4.9.2.3 Local

California Vehicle Code Section 31600 (Transportation of Explosives)

Establishes requirements related to the transportation of explosives in quantities greater than 1,000 pounds, including licensing and route identification.

Certified Unified Program Agency—Fresno County Environmental Health Department

As stated above, the Fresno County Environmental Health Division is the designated CUPA in Fresno County. The Environmental Health Division provides oversight of the following programs:

- **Hazardous Materials Release Response Plans and Inventories (Hazardous Materials Business Plans)**: The California Office of Emergency Services (OES) established the Business Plan Program (19 CCR Section 5030.2 et seq.) to prevent or minimize the damage to public health and safety and the environment from a release or threatened release of hazardous materials, and to satisfy community right-to-know laws. This is accomplished by requiring businesses that handle hazardous materials over threshold quantities to prepare a Hazardous Materials Business Plan that includes a hazardous materials inventory, a site map identifying the location of hazardous materials storage, an emergency response and spill prevention plan, and a training program. The Business Plan must be submitted to the CUPA/emergency responders and updated annually.
- **California Accidental Release Prevention (CalARP) Program**: The CalARP Program (19 CCR Section 2735 et seq.) was established to prevent accidental releases of those substances determined to potentially pose the greatest risk of immediate harm to the public and environment. The CalARP Program requires businesses that store or use certain hazardous materials over threshold quantities to prepare a risk management plan, to conduct an assessment of the off-site hazard potential and implement a program to minimize the risk of a release.
- **Aboveground Petroleum Storage Act Program**: The Aboveground Petroleum Storage Act Program (Cal. Health & Safety Code Section 25270 et seq.) regulates the management of petroleum/oils stored in ASTs. It requires that the owner/operator of aboveground petroleum/oil storage tanks with cumulative capacities over 1,320 gallons prepare a SPCC Plan, conduct inspections, and implement the plan when necessary.
- **Hazardous Waste Generator, On-site Hazardous Waste Management and Treatment Permitting Programs**: These programs regulate the generation, management, treatment, and disposal of hazardous waste (Cal. Health & Safety Code Section 25100 et seq.; CCR Title 22, Division 4.5). California has more

stringent requirements than those established by the EPA; therefore, hazardous waste is referred to as RCRA (Federal) and non-RCRA (California) hazardous waste. The regulations contain comprehensive requirements ranging from the identification of hazardous waste (RCRA/non-RCRA), specific details on how a waste must be managed based on quantities and type, various levels of permit requirements for the treatment of hazardous waste and stringent disposal requirements.

- **Underground Storage Tanks (UST) Program**: This Program (16 CCR Section 2610 et seq.) is designed to protect public health and safety and the environment from releases of petroleum and other hazardous substances from USTs. The CUPA regulates how a UST should be closed or removed. Permits must be obtained prior to initiating removal or closure of a UST. Soil sampling to identify potential contamination from the UST may be required.

Implementation of these programs involves:

- Permitting and inspection of regulated facilities.
- Providing educational guidance and notice of changing requirements stipulated in state or federal laws and regulations.
- Investigations of complaints regarding spills or unauthorized releases.
- Administrative enforcement actions levied against facilities that have violated applicable laws and regulations.

Environmental Health staff inspects facilities that generate hazardous waste, investigates reports of illegal hazardous waste disposal, and responds to emergency spills of hazardous chemicals. Environmental Health staff also participates in public education programs to inform industries and residents about the laws and regulations relating to the safe disposal of hazardous waste.

Facilities that store, use, or handle hazardous materials above reportable amounts are required to prepare and file a Hazardous Materials Business Plan for the safe storage and use of chemicals. In the event of an emergency, firefighters, health officials, planners, public safety officers, health care providers, and others rely on the Business Plan. Implementation of the Business Plan should prevent or reduce damage to the health and safety of people and the environment when a hazardous material is released.

San Joaquin Valley Air Pollution Control District Rule 4002 on Asbestos Demolition and Renovation Compliance

The San Joaquin Valley Air Pollution Control District (Air District) administers the Asbestos Program for the region, which requires compliance with the National Emissions Standards for Hazardous Air Pollutants regulation, 40 CFR, Part 61, Subpart M. The regulation requires notification, inspection, and emission control as they relate to the demolition of structures that may have Asbestos Containing Materials. All structures on commercial, industrial, or public land must be surveyed by a Certified Asbestos Consultant prior to demolition (Air District 2012).

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) Health and Safety Element and Public Facilities and Services Element include policies related to fire protection and hazardous materials. The policies applicable to the proposed project are listed below.

Health and Safety Element

Section B. Fire Hazards

Goal HS-B: To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.

Policy HS-B.1: The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.

Policy HS-B.10: The County shall refer development proposals in the Very High Fire Hazard Severity Zones and State Responsibility Areas of the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety standards. If dual responsibility exists, both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall apply.

Policy HS-B.15: The County shall ensure that any new development will have adequate fire protection, including proximity to adequate provisions for fire flow and emergency vehicle access and fire hardened communication, including high speed internet service.

Section F. Hazardous Materials

Goal HS-F: To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.

Policy HS-F.1: The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.

Policy HS-F.2: The County shall require that applications for discretionary development projects that will use hazardous materials or generate hazardous waste in large quantities include detailed information concerning hazardous waste reduction, recycling, and storage.

Policy HS-F.5: The County shall require that demolition of structures where friable asbestos or other hazardous materials could be released into the environment comply with applicable regulations and standards.

Policy HS-F.7: The County shall ensure that the mining and processing of minerals in the County is conducted in compliance with applicable environmental protection standards.

Public Facilities and Services Element

Section H. Fire Protection and Emergency Medical Services

Goal PF-H: To ensure the prompt and efficient provision of fire and emergency medical facility and service needs, to protect residents of and visitors to Fresno County from injury and loss of life, and to protect property from fire.

Policy PF-H.2: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in unincorporated areas of the County shall not be approved until such time that fire protection facilities and services acceptable to the Public Works and Planning Director in consultation with the appropriate fire district are provided.

Policy PF-H.5: The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.

Policy PF-H.10: The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the California Fire Code and other State and local ordinances.

4.9.3 Significance Criteria and Analysis Methodology

4.9.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to hazards and hazardous materials if it would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area.
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

The Rockfield Quarry is not located within a quarter mile of an existing or proposed school. Therefore, topic (c) is not applicable to the proposed project and not discussed further in this Draft EIR.

The Rockfield Quarry is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, topic (d) is not applicable and not discussed further in the Draft EIR.

The Rockfield Quarry is not located within an airport land use plan or within two miles of a public airport or public use airport. Therefore, topic (e) is not applicable and not discussed further in this Draft EIR.

The potential of the proposed project to result in the release of naturally occurring asbestos is addressed in Section 4.3, "Air Quality," of this Draft EIR.

4.9.3.2 Analysis Methodology

The methodology used in this EIR for analyzing impacts related to hazards and hazardous materials includes identifying the potential for increased human exposure to hazards and hazardous materials that would be associated with mining operations and reclamation activities on the project sites. In determining the level of significance, this analysis assumes that the proposed project would comply with relevant state and local ordinances and regulations, as well as the General Plan policies presented above.

4.9.4 Project Impacts and Mitigation Measures

Impact 4.9-1: Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials or through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment During Construction, Relocation, and/or Demolition Activities

The proposed project would involve the construction of a new hot-mix asphalt plant at the Plant Site. At the Quarry Site, Stage 1 of the proposed project would involve construction of an aggregate processing plant, portable aggregate plant, and a building containing offices and a scale house. Stage 2 of the proposed project would involve the disassembly of the ready-mix concrete plant, hot-mix asphalt plant, and portable recycle plant on the Plant Site and the relocation and construction of these facilities on the Quarry Site. All other facilities and structures on the Plant Site would be demolished and removed. At the completion of Stage 2, all facilities and structures on the Quarry Site would be demolished and removed.

The proposed construction, relocation, and demolition activities would require the use of hazardous materials such as fuels and lubricants for construction vehicles and equipment, paints, solvents, and adhesives. The accidental release of the materials could result in a significant hazard to the public and environment. The proposed project would be required to comply with a number of federal, state, and local laws and regulations regarding the storage, use, transport, and disposal of hazardous materials. The construction contractor would be required to comply with the federal OSHA standards defined under Title 29 of the Code of Federal Regulations (CFR), Section 1910, and Cal/OSHA requirements under CCR Title 8, which specify requirements for employee training, availability of safety equipment, accident prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. CCR Title 8 also includes requirements for accident and illness prevention programs and hazard communication program regulations that include worker safety training and hazard information requirements, procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous

substances and their handling, and preparing health and safety plans to protect workers. Compliance with existing regulations would minimize the risk of hazardous materials releases to occur during proposed construction, relocation, and demolition activities.

The Quarry Site does not currently contain any structures. The Plant Site contains multiple structures; however, the only structure on the Plant Site that was constructed prior to 1980 is the aggregate processing plant. This structure consists primarily of wood and steel posts and beams and is therefore unlikely to contain these hazardous materials. Nevertheless, the structure is industrial and would be subject to the Asbestos Program administered by the Air District. Under this program, an asbestos survey would be conducted by a Certified Asbestos Consultant, and any suspicious materials to be disposed of in accordance with agency requirements. Written notification would be provided to the Air District and to the Public Works and Planning Department or designee five business days in advance of demolition activities. The demolition contractor would determine the percentage of ACMs in the volume of material to be disposed. The ACM would be taken to the appropriate landfill based on the volume of ACMs. The necessary notifications, record keeping, and inspections would be conducted as required by the ACM regulations.

A lead-based paint survey would also be required prior to demolition of the aggregate processing plant per the state lead-based paint regulations. Notification to the California Department of Public Health would be provided and removal will be performed by certified professionals. The removal would be in a manner that does not result in contamination of non-work areas with lead-contaminated dust, lead-contaminated soil, or lead-based paint debris, and in accordance with the abatement plan. The necessary notifications, record keeping, and inspections would be conducted as required by the lead-based paint regulations. A copy of the results of the clearance inspection would be provided to the County upon completion of abatement and inspection activities.

While electrical equipment and lighting ballasts that may contain PCBs can be readily identified, PCB-containing building materials such as caulking, specialized paints, mastics, and other adhesives would require testing to evaluate whether these materials contain PCBs; however, there are no existing regulations that require testing to identify PCBs in building materials. If testing for PCBs in building materials was not performed prior to demolition of the aggregate processing plant, the improper handling of potential PCBs-containing materials could result in the release of PCBs into the environment. This would be a potentially significant impact. Mitigation Measure 4.9-1 would require the operator of the Rockfield Quarry to conduct a Hazardous Building Materials Survey for PCBs prior to the demolition of the aggregate processing plant on the Plant Site, and to

properly dispose of any PCB-containing materials identified by the survey in accordance with the requirements of the qualified environmental professional.

Compliance with existing regulations and implementation of Mitigation Measure 4.9-1 would ensure that hazardous materials impacts related to the construction, relocation, and demolition activities on the Plant Site would be less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.9-1: *Survey for PCB-Containing Building Materials*

Prior to the County issuing a demolition permit for the aggregate processing plant, the operator of the Rockfield Quarry shall prepare a comprehensive Hazardous Building Materials Survey for the project site signed by a qualified environmental professional. The Hazardous Building Materials Survey shall document the presence, or lack thereof, of PCB-containing equipment and materials. The Hazardous Building Materials Survey shall include abatement specifications for the stabilization and/or removal of the identified hazardous building materials in accordance with all applicable laws and regulations. The demolition contractor(s) shall implement the abatement specifications and submit to the County evidence of completion of abatement activities prior to demolition of the existing structure.

Level of Significance After Mitigation: Less than significant.

Impact 4.9-2: Create a Significant Hazard to the Public or the Environment Through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials Transported, Used, or Disposed of During Mining or Final Reclamation

Petroleum-based fuels and oils would be used to operate vehicles and equipment on-site during Stage 1 and Stage 2 project operations and during final reclamation activities. A limited quantity of lubricants and solvents used for maintenance and repair of equipment would be stored in service vehicles and in maintenance areas on the Plant Site and Quarry Site. The transport, transfer, storage, and use of these substances would create a potential for their accidental uncontrolled release. Such releases could result in contamination to soils or surface waters if not properly controlled and cleaned-up. Flammable or other hazardous materials improperly stored or disposed or accidently released to the environment would create fire hazard, risk to human health, and environmental degradation, including surface and groundwater contamination. This is a potentially significant impact.

The project would be required to obtain coverage as may be applicable under the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 for Storm Water Discharges Associated with Industrial Activity, Water Quality Order No. 2014-0057-DWQ (Industrial General Permit). The operator of the Rockfield Quarry (Operator) would be required to obtain WDRs for any discharges of wastewater not authorized under the Industrial General Permit. The Industrial General Permit requires the preparation and implementation of a site-specific stormwater pollution prevention plan (SWPPP). A SWPPP identifies all potential pollutants and their sources and includes a list of best management practices to reduce the discharge of potential stormwater pollutants. The NPDES program is described in detail in Section 4.10, "Hydrology and Water Quality," of this Draft EIR.

In addition, all hazardous materials would be managed and stored in accordance with the applicable programs overseen by the Fresno County Environmental Health Division. Specifically, the Operator would be required to prepare a Hazardous Materials Business Plan and an SPCC Plan, which would be prepared for the both the Plant Site and Quarry Site and in accordance with hazardous material regulations. Diesel, gasoline, and asphaltic oil would be stored in ASTs with appropriate secondary containment. In addition, any other oil products or hazardous materials that are stored in containers of 55 gallon or greater would be stored with appropriate secondary containment. No hazardous waste would be disposed of on the project site. All waste would be transported to a permitted/approved waste disposal facility.

With regards to blasting, there have been multiple studies completed on the effects of blasting on groundwater. These studies include Bond (1975), Berger (1980), and Beaver (1984), which concluded that there is no significant long-term chemical or mineralogical changes observed in groundwater that could be attributed to blasting. In the study performed by Bond (1975), water samples were taken in the same hole that explosives were detonated in and no change in water quality due to the decomposition products of the explosives could be discerned from the analysis. Therefore, it is unlikely that blasting would result in the release of hazardous materials to the environment. Furthermore, the *Blasting Protocols* (Appendix H-6) required to be implemented by Mitigation Measure 4.10-1 specify practices to prevent the contamination of groundwater and surface water as a result of blasting. The protocols prohibit the storage of explosives on site, require blasting designs and loading controls to be prepared by qualified blasting contractors to ensure complete detonation, specify appropriate loading practices such as cleaning loading equipment in areas where wastewater can be properly contained, require explosives to be selected that have appropriate water resistance for the site conditions present, and require the management of muck piles (the fragmented pieces of rock left after the blast) to be managed to prevent interaction with stormwater.

Compliance with existing regulations and implementation of the *Blasting Protocols* (Appendix H-6), as required by Mitigation Measure 4.10-1, would ensure that the potential of Stage 1 and Stage 2 operations and final reclamation activities on the Plant Site and Quarry Site to result in a significant hazard to the public or the environment through the release of hazardous materials would be less than significant with mitigation.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures: *Implement Mitigation Measure 4.10-1.*

Level of Significance After Mitigation: Less than significant.

Impact 4.9-3: Create a Significant Hazard to the Public or the Environment Through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials Transported, Used, or Disposed of Post-Reclamation

Upon the completion of final reclamation activities, the Plant Site and Quarry Site would be converted to open space land use. No activities or land uses that could create a significant hazard or the release of hazardous materials to the public or the environment would occur on the sites. This impact would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.9-4: Create a Significant Hazard to the Public or the Environment Through Flyrock Generated by the Use of Blasting Agents on the Quarry Site

The purpose of rock blasting is to fracture and displace intact rock to facilitate its removal by mechanical equipment. The breakage and displacement occurs within a planned blast displacement zone called the "muck pile." The Mine Safety and Health Administration (MSHA) defines this area of expected blasted rock displacement as the blast area. The blaster-in-charge is responsible for defining the blast area and the clearance zone around the blast area. Inside the clearance zone, the blaster-in-charge must evacuate all personnel and equipment prior to firing the blast. Outside of the clearance zone, there should be no risk to personnel or equipment from flying rock fragments. Rock fragments that are displaced beyond the blast clearance zone can be considered "flyrock." Flyrock is generated when the energy of the explosive is too close to the air/rock interface. The two primary origins for flyrock come from either an area on the free face in front of a blast hole or the collar height (i.e., distance from the explosive to the top of the hole) of the blast hole. Flyrock can also originate from secondary blasting, where charges are placed

in boulders to reduce oversize. The key element of flyrock control is that explosive charges must have the appropriate degree of burial or confinement. Flyrock can be reduced to extremely low levels with sufficient burial or confinement of explosive charges, but it can never be reduced to zero.

The potential adverse impacts of flyrock on the public or the environment include having these projectiles or rock fragments hit a person, animal, structure, vehicle, or other objects. Potential impacts associated with flyrock during proposed blasting operations at the Quarry Site would be greatest during initial pit development where fly rock, if it occurred, could be cast in multiple directions. As the pit is developed, flyrock would be primarily cast toward the pit. Furthermore, as the pit is deepened, the potential to cast flyrock beyond the mine property to nearby receptors would diminish.

Excessive flyrock can result from poor blast design or unanticipated zones of weakness in rock. Flyrock can travel long distances when excessive loads are used. The Blast Impact Analysis Peer Review (Appendix H-7) recommends that blasting initially commence at a distance of at least 500 feet from the proposed outer edge of the hard rock portion of the quarry until a central pit is developed to a depth of at least 50 feet. This would reduce the hazard to sensitive receptors near the Quarry Site during the initial phases of blasting when the potential for injury or damage to occur is greatest. The peer review also recommends that monitoring of flyrock distance should be conducted during any blasting within the upper 50 feet of the hard rock portion of the quarry, no matter which phase of mining is in progress. The proposed SMRP indicates that blasting would begin at the center of the Quarry Site, which is located more than 1,000 feet from the nearest sensitive receptors and is therefore consistent with the recommendation of maintaining a minimum distance of 500 feet for initial blasting. In addition, Mitigation Measure 4.10-1 would require implementation of the *Blasting Protocols* (Appendix H-6). Consistent with the recommendations of the Blast Impact Analysis Peer Review, the *Blasting Protocols* include a Flyrock Mitigation Plan with specific requirements to control flyrock for each blast on the Quarry Site. The Flyrock Mitigation Plan requires that the blaster-in-charge develop and communicate a plan for every blast, including following these protocols as discussed in the plan:

- Define the blast area.
- Define an appropriate blast clearance zone based upon the proposed blast design, charging details and observed geologic conditions.
- Denote the location of warning signs outside the blast clearance zone.
- Denote the location of guards outside the blast clearance zone to stop accidental entry into the clearance zone.

- Define the warning whistles to be used to denote the imminent blast.

The Flyrock Mitigation Plan specifies that secondary breakage with explosives should be avoided. It states that every blast should be recorded with a video camera from two locations. One location should be able to observe the free face of the rock mass containing the loaded blastholes and the other location should be at 90^0 to the first location and be able to observe the top of the blast block and profile of the free face. These videos should be reviewed after each blast for any signs of ejected material beyond the blast clearance zone or gases coming from the free face or the collar height of the blastholes. If these signs are observed, details from the drill logs, burden profiles, blast reports, and seismograph records should be reviewed and appropriate corrective actions should be considered. The Flyrock Mitigation Plan provides a summary of multiple possible corrective actions that can be implemented to control flyrock if an exceedance occurs.

The above recommendations are made for dry ground conditions. Water saturated ground conditions can aid in the transmission of explosive pressure. This increased pressure can increase the potential for flyrock and extend the maximum displacement range of rock material. The blaster must apply additional factors of safety to this design in saturated ground conditions.

If flyrock exceeds the limits of the defined blast clearance zone, the County must be notified within 48 hours and a corrective action plan must be developed that identifies changes to the blasting program to prevent future exceedances. The *Blasting Protocols* also detail the requirements for complaint response procedures; record keeping; and annual reporting of monitoring, complaints investigations, and corrective actions. With implementation of Mitigation Measure 4.10-1, the potential of the proposed project to create a significant hazard to the public or the environment through flyrock generated by the use of blasting agents would be less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures: *Implement the Flyrock Mitigation Plan established by the Blasting Protocols as required by Mitigation Measure 4.10-1.*

Level of Significance After Mitigation: Less than significant.

Impact 4.9-5: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan

The proposed project would have the potential to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan if the

mining, processing, production, and reclamation activities under the proposed project could result in the complete or partial closure of roadways, interfere with identified evacuation routes, restrict access for emergency response vehicles, or restrict access to critical facilities such as hospitals or fire stations. The Fresno County Multi-Hazard Mitigation Plan (Fresno County 2018) does not identify specific evacuation routes within the County; however, the Town of Friant and other inhabited areas north of the Rockfield Quarry located along North Friant Road would potentially use North Friant Road and other roadways that would be used by automobiles and trucks associated with the proposed project (i.e., Willow Avenue, Road 206/North Fork Road, Road 145/State Route 145 as described in Section 4.17, "Transportation," of this Draft EIR) as an evacuation route.

The proposed project would not require the closure or partial closure of any public roads, including North Friant Road, and therefore would not inhibit access by emergency vehicles or interfere with an evacuation plan. There are no critical facilities, such as hospitals or fire stations, located in the vicinity of the Plant Site or Quarry Site. The nearest fire stations and hospitals are located more than 2 miles from the Rockfield Quarry. Therefore, the proposed project would not have the potential to interfere with access to these facilities.

During Stage 1 operations, trucks travelling to and from the Plant and Quarry Sites could interfere with emergency response vehicles traveling along North Friant Road or with vehicular traffic along North Friant Road during emergency evacuation procedures if quarry trucks significantly blocked traffic along North Friant Road. During Stage 2, trucks traveling along North Friant Road to and from the Quarry Site could also interfere with emergency response vehicles traveling along North Friant Road. However, North Friant Road is a four-lane, divided road in the vicinity of the Plant Site and the Quarry Site. Therefore, there is sufficient room along North Friant Road for emergency vehicles to safely pass trucks along North Friant Road. Furthermore, truck traffic would continue to use existing southbound acceleration lanes and northbound left-hand turn pockets at both the Plant Site and Quarry Site entrances. The use of these lanes would prevent trucks entering and leaving the Plant Site and Quarry Site from blocking emergency vehicles travelling along North Friant Road. Automobiles and trucks associated with the proposed project would be required to obey all traffic safety laws, including Section 21806(a) of the California Vehicle Code, which requires vehicles to yield the right-of-way and drive to the right side of the roadway and stop until emergency vehicles have passed. Therefore, the automobile and truck trips generated by the proposed project would not interfere with emergency response vehicles. Upon completion of reclamation, there would be only occasional vehicular travel to and from the Plant Site and Quarry Site, and

therefore there would be no potential to interfere with an emergency response plan or emergency evacuation plan.

For these reasons, the potential of Stage 1 operations, Stage 2 operations, or the reclamation stage of the proposed project to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.9-6: Expose People or Structures, Either Directly or Indirectly, to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires

The proposed project would add five full-time employees to the Rockfield Quarry sites and would add aggregate processing and production facilities to both the Plant Site and Quarry Site. The project sites are located within a Local Responsibility Area that is not a Very High Fire Hazards Severity Zone. The area immediately to the east of North Friant Road is mapped within a Moderate Fire Hazard Severity Zone in a State Responsibility Area (CAL FIRE 2007).

The risk of fires on the site is limited because the Rockfield Quarry is not located in a Very High Fire Hazard Severity Zone and because the majority of both sites are disturbed and contain limited vegetation that could spread fire across the sites. Furthermore, the project sites are located along North Friant Road and employees can readily evacuate the sites and avoid injury or death if a fire occurs in the areas surrounding the project sites.

Upon completion of mining operations and reclamation activities, the proposed project would be converted to open space land use with large ponds located on both sites. No structures would be located on the sites, and visitors to the site would be limited to those personnel required for occasional site maintenance.

For these reasons, the potential for the proposed project to expose people or structures to a significant risk of loss, injury, or death involving wildland fires would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

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4.10—HYDROLOGY AND WATER QUALITY

This section of the Draft EIR describes the existing hydrology and water quality setting near the Rockfield Quarry; summarizes applicable jurisdictional laws and regulations associated with hydrology and water quality; and presents significance criteria and thresholds for the evaluation of potential environmental impacts. This section then describes analysis methodologies and identifies the potential hydrology and water quality effects of the proposed project. Measures to mitigate potential impacts are recommended, as appropriate.

The information in this section is based on Applicant-prepared studies, publicly available sources, and a County peer review. The Applicant-prepared studies used are:

- *Hydraulic Analysis for CEMEX Rockfield Modification Project*. Prepared by Chang Consultants. October 15, 2020. (Appendix G-1, "Hydraulic Analysis")
- *CEMEX Rockfield Modification Project Surface Runoff and Drainage Plan*. Prepared by Chang Consultants. July 1, 2020. (Appendix G-2, "Surface Runoff and Drainage Plan")
- *Groundwater Conditions at the Plant Site of the CEMEX Rockfield Modification Project.* Prepared by Kenneth D. Schmidt & Associates (KDSA). May 2021. (Appendix G-3, "Groundwater Conditions at the Plant Site")
- *Groundwater Conditions at the Quarry Site of the CEMEX Rockfield Modification Project.* Prepared by KDSA. May 2021. (Appendix G-4, "Groundwater Conditions at the Quarry Site")
- *Revised Hydrology and Water Quality Analysis Report, Rockfield Modification Project, Fresno County, California.* Prepared by EMKO Environmental, Inc. June 2023. (Appendix G-5, "Hydrology and Water Quality Analysis Report")
- *Addendum to: Revised Hydrology and Water Quality Analysis Report, Rockfield Modification Project, Fresno County, California*. Prepared by EMKO Environmental, Inc. April 2024. (Appendix G-6, "Addendum to Hydrology and Water Quality Analysis Report").

The October 15, 2020, *Hydraulic Analysis for CEMEX Rockfield Modification Project* (Hydraulic Analysis) was peer reviewed by County-retained Brown and Caldwell in June 2020. The peer review letter report is on file with the County. The Hydraulic Analysis was revised in response to the County's peer review and finalized in October 2020. The final Hydraulic Analysis adequately addressed the County's peer reviewer's comments and questions.

The July 1, 2020, *CEMEX Rockfield Modification Project Surface Runoff and Drainage Plan* (Drainage Plan) was peer reviewed by Brown and Caldwell in January 2021, which resulted in no required changes.

The Groundwater Conditions at the Plant Site of the CEMEX Rockfield Modification Project (Plant Site Groundwater Conditions Report) and the Groundwater Conditions at the Quarry Site of the CEMEX Rockfield Modification Project (Quarry Site Groundwater Conditions Report) were peer reviewed by Brown and Caldwell in January 2021. The peer review letter report is on file with the County. The Applicant updated the Quarry Site Groundwater Conditions report in May 2021 in response to the peer review comments, and also prepared a response to comments memo (Buada Associates, Inc. September 2021) and a Hydrology and Water Quality Analysis Report (EMKO August 2021) to provide additional information requested by the peer review and to present a comprehensive report synthesizing the results of the various technical investigations related to project groundwater and surface water hydrology, drainage, and water quality concerns. The Hydrology and Water Quality Analysis Report was updated again in March 2022 to include newly collected groundwater quality data and to respond to preliminary peer review comments from Benchmark Resources.

Brown and Caldwell then peer reviewed the Applicant provided responses, and Benchmark Resources peer reviewed the revised *Hydrology and Water Quality Analysis Report*. Brown and Caldwell and Benchmark Resources prepared additional peer review letter reports in January 2023. The Applicant prepared response to comments memoranda to the peer review letter reports in April 2023, and an updated *Hydrology and Water Quality Analysis Report* in June 2023.

Upon review of the response to comments, memos, and the revised *Hydrology and Water Quality Analysis Report*, Brown and Caldwell and Benchmark Resources concluded that their comments had been adequately addressed (Brown and Caldwell 2023; Benchmark Resources 2023).

An *Addendum to: Revised Hydrology and Water Quality Analysis Report, Rockfield Modification Project, Fresno County, California* (Addendum to Hydrology and Water Quality Analysis Report) was prepared by EMKO in April 2024 to provide additional groundwater level monitoring data obtained at the Project Sites between August 2017 and December 2023.

4.10.1 Environmental Setting

The existing hydrology and water quality conditions at the Plant Site and Quarry Site (collectively "project sites") and vicinity are discussed below. Unless otherwise noted, the information presented in this subsection is based on the Hydraulic Analysis (Appendix

G-1), Surface Runoff and Drainage Plan (Appendix G-2), groundwater conditions reports (Appendices G-3 and G-4), *Hydrology and Water Quality Analysis Report* (Appendix G-5), and the Addendum to the Hydrology and Water Quality Analysis Report (Appendix G-6).

4.10.1.1 Climate and Precipitation

The climate of the region consists of warm, dry summers and cool, wet winters. Based on measurements collected from the Friant Government Camp Station operated by the National Weather Service in Fresno County. The highest average monthly maximum temperatures of about 100°F occur in July (WRCC 2012a)[1]. The lowest average monthly minimum temperatures of about 37°F occur in December and January (WRCC 2012a). Average annual precipitation of approximately 14 inches occurs as rainfall primarily during the months of November through March (WRCC 2012b). However, the review of annual rainfall for an 82-year period (1940 through 2021) by EMKO (2023) shows a large range in variability from the average. Within the time period reviewed, the driest year was 2014, with 6.36 inches of rain, while the wettest year was 1983, with 28.1 inches of rain. The record shows that rainfall patterns in the region typically consist of several years of below-normal rainfall (i.e., drought periods) that are interrupted by one or two years with rainfall that is appreciably above normal.

4.10.1.2 Topography

The Plant Site is relatively flat and slopes gently to the west; surface elevations range from 300 to 320 feet above mean sea level (msl). The Quarry Site generally slopes to the south; due to mining excavation, the surface elevations range from approximately 250 to 330 feet msl.

The existing topography immediately surrounding the project sites is generally flat within the valley of the San Joaquin River. The San Joaquin River bluffs, approximately 200-feet in height, are located to the west of the project sites across the San Joaquin River, and river bluffs approximately 80-feet in height are located to the east across North Friant Road. Owens Mountain is located approximately 4.5 miles to the east of the project sites. Millerton Lake, formed by the Friant Dam, is located approximately 3.0 miles north of the Quarry Site.

[1] The water year in this region of California extends from October 1 of a calendar year to September 30 of the subsequent calendar year. This period better represents the normal climatic and rainfall cycles of the region than does a calendar year.

4.10.1.3 Surface Water Drainage

The Project Sites are within the watershed of the San Joaquin River which originates in the high-elevation Eastern Sierra Nevada Mountain range, flowing southwest to the San Joaquin Valley floor, before turning northwest to join with the Sacramento River at the Sacramento-San Joaquin Delta (Delta). The mainstem of the San Joaquin River is divided into three sections: the upper, middle, and lower watersheds. The Project Sites drain to the middle watershed, which stretches 147 miles from Friant Dam, just north of the project sites, to the confluence with the Merced River. The middle watershed drains an area of about 5,800 square miles (3.7 million acres) (NOAA 2020).

As described previously, the Plant Site generally slopes to the west while the Quarry Site generally slopes to the south. However, due to mining activities, natural slopes have been altered and the Project Sites drain primarily inward toward the excavations. Stormwater is entirely contained within the Project Sites by surrounding berms.

Plant Site Drainage

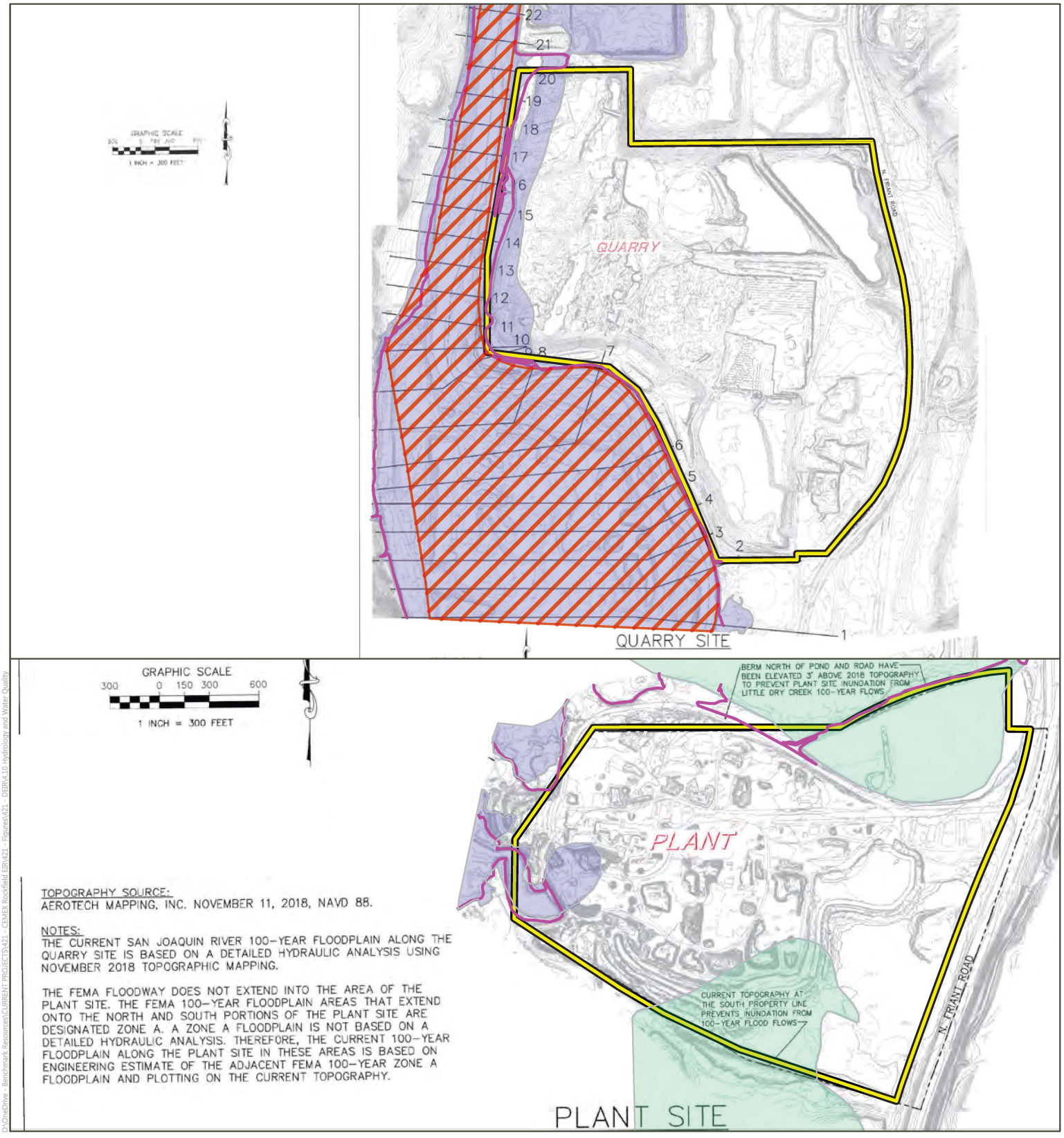
Stormwater runoff within the Plant Site drains primarily towards excavated areas and is contained within the site by surrounding berms; however, portions of the western edge of the Plant Site that contain stockpiles are located within the San Joaquin River 100-year floodplain and drain west towards the San Joaquin River (shown in Figure 4.10-1, "Current and Regulatory Floodways and Floodplains"). The San Joaquin River is located approximately 0.6 miles to the west of the Plant Site.

Two on-site groundwater production wells provide water to the Plant Site ready-mix concrete plant and water for domestic use (e.g., toilets and hand washing). These uses do not generate wastewater beyond wastewater for domestic use that is sent to the existing two septic systems on the Plant Site.

Quarry Site Drainage

Stormwater runoff within the Quarry Site drains primarily towards excavated areas and is contained within the Quarry Site by surrounding berms.

An ephemeral swale is located within the southeast portion of the Quarry Site along North Friant Road. No water was observed in this ephemeral swale during the field survey conducted as part of the habitat assessment, despite heavy rains. It is presumed that runoff from North Friant Road temporarily fills the swale during the rainy season (ELMT 2022).



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Current and Regulatory Floodways and Floodplains
ROCKFIELD MODIFICATION PROJECT
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Figure 4.10-1

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Erosion and Sedimentation

Surface water quality can be impaired by erosion and sedimentation along waterways. The Hydraulic Analysis (Appendix G-1) evaluated 100-year flow velocities and floodway characteristics of the San Joaquin River at 20 cross-sections along the Quarry Site (cross-sections 1 through 20 are shown in Figure 4.10-1) to determine the river's susceptibility to erosion.

The San Joaquin River easterly bank along the Quarry Site is naturally lined and contains a relatively uniform cover of grasses and weeds as well as scattered trees and brush. The easterly bank slope is generally flatter than 2:1 (horizontal: vertical). There are no signs of significant bank erosion. During historic flow events, including the January 1997 flood event of approximately 60,300 cubic feet per second (cfs), the easterly bank along the Quarry Site did not experience significant erosion and the bank has never breached into the Quarry Site.

The permissible velocity (can be considered as an erosion velocity) reflects the flow velocity below which a natural channel will resist erosion and remain stable. Based on the composition of the San Joaquin Riverbank material, vegetative cover, and bank slope near the project sites, the permissible velocity is estimated to be approximately 6 feet per second (fps).

The results of the Hydraulic Analysis (Appendix G-1) indicate that the 100-year flow velocities along the Quarry Site San Joaquin Riverbank are generally at or below 6 fps at all cross-sections except at cross-sections 8, 15, and 16. The easterly bank velocity at cross-section 8 is 6.8 fps, but the bank is along the inside of a bend, so the forces will be directed towards the opposite bank.

The velocities at cross-sections 15 and 16 are 7.7 and 8.2 fps, respectively. Consequently, the flow velocity results indicate that there is currently some potential for erosion in a few areas of the San Joaquin River along the Quarry Site western boundary.

Due to the distance of the Plant Site from the San Joaquin River, a similar evaluation was not completed for the San Joaquin River floodway near the Plant Site. However, the Hydraulic Analysis (Appendix G-1) notes that, based on the Flood Insurance Study completed by FEMA (2016), the velocity of the San Joaquin River floodway near the Plant Site ranges from about 3.1 to 4.6 fps, which is below the permissible velocity.

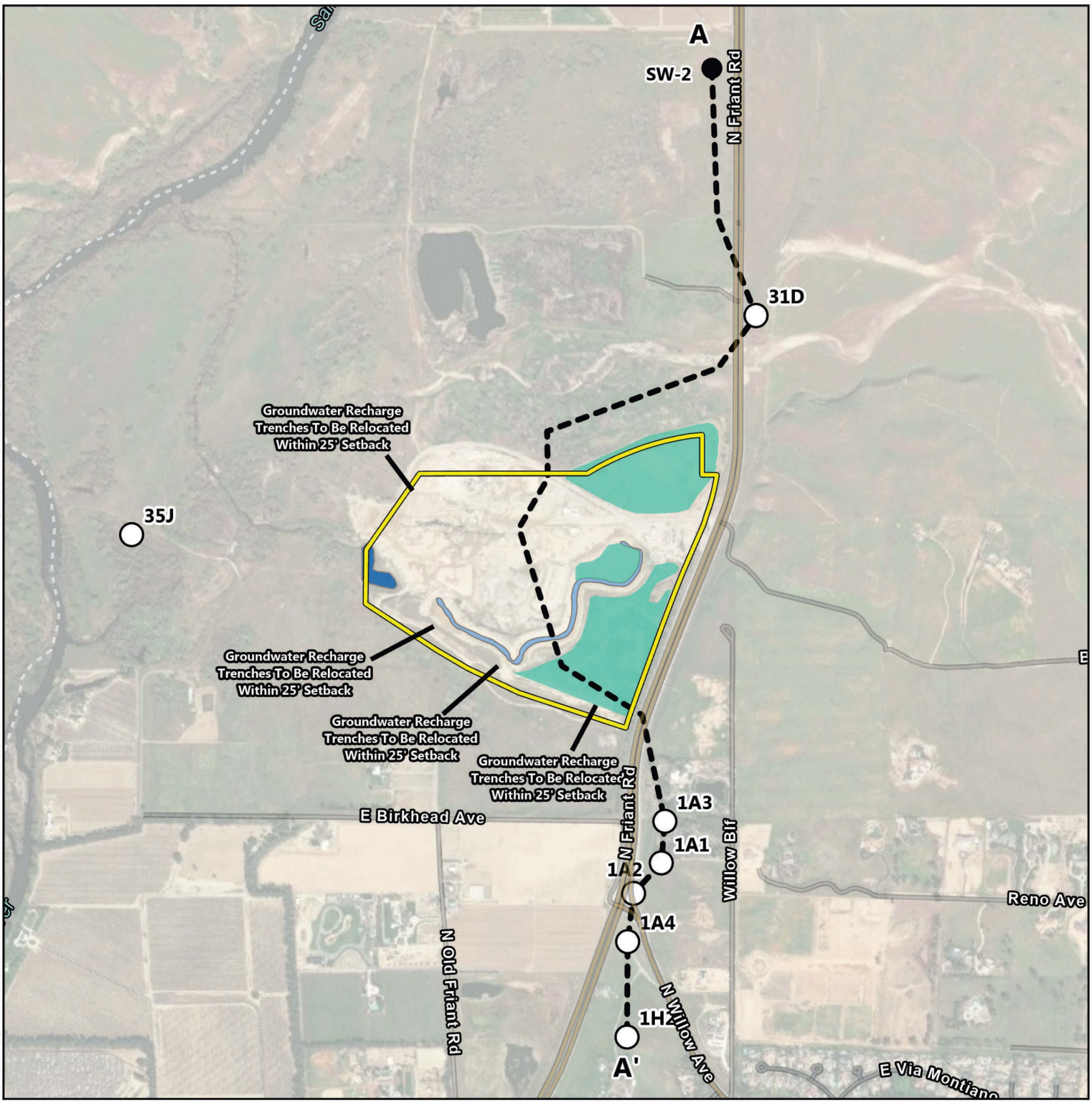
4.10.1.4 Current Operational Water Uses and Supplies

Plant Site Water Use and Supplies

The Applicant has riparian water rights to use river water for industrial purposes in connection with the processing of rock, sand, and gravel. Water from the San Joaquin River is delivered to the Plant Site via a river water delivery ditch that terminates just inside the western boundary of the Plant Site. After the aggregate is processed and cleaned water with fines washed from the aggregate is sent to silt ponds via a narrow wastewater conveyance ditch where the silts and fines are settled out. Water from the silt ponds is then recycled back to the aggregate processing and cleaning plant as process water, supplemented with water from the San Joaquin River, as necessary. Water from the silt ponds is also pumped to water trucks and used for dust control or left to recharge the underlying groundwater aquifer. The silt ponds, river water delivery ditch, and wastewater conveyance ditch, as mapped based on the 2019 field surveys conducted by ELMT biologists (described in detail in Section 4.4, "Biological Resources," of this Draft EIR), are shown in Figure 4.10-2, "Plant Site Surface Water Features and Wells." The silt ponds are all temporary water features that contain surface runoff from rainfall and/or groundwater. Water is pumped out of the silt ponds, as necessary, to accommodate mining, and new ponds may be formed as mining progresses throughout the Plant Site. The water level of the ponds fluctuates due to seasonal changes in the surface water runoff and water table. The existing process for water use on the Plant Site is shown schematically in Figure 4.10-3, "Plant Site Existing and Proposed Water Flow Diagram." Currently, approximately 295 acre-feet per year (acre-feet/year) of river water is consumed for aggregate processing at the Plant Site.

Quarry Site Water Uses and Supplies

No surface water from the San Joaquin River is used at the Quarry Site. The Quarry Site includes a Northeast Pond that is used for groundwater recharge and is the only permanent pond onsite. Additional ponds have formed on the Quarry Site from current and historic mining operations. Similar to the Plant Site, these ponds are all temporary water features that contain surface runoff from rainfall and/or groundwater. Water is pumped out of the ponds, as necessary, to accommodate mining, and new ponds may be formed as mining progresses throughout the Quarry Site. The locations of the ponds present on the Quarry Site during the 2019 field surveys conducted by ELMT biologists (described in detail in Section 4.4) is shown in Figure 4.10-4, "Quarry Site Surface Water Features and Wells."



SOURCES: Site Boundary/Ponded Water–Bauda Associates, Inc., July 2023; Cross Section/Wells–digitized from KDSA 2020/EMKO 2023, Recharge Trenches digitized from CEMEX 2021; Aerial–Maxar, dated 11-29-2022; compiled by Benchmark Resources in 2023

- Parcels Owned by CEMEX
- Subsurface Geologic Cross Section A-A' (See Figure 4.10-8 for Cross Section Shown)
- County Boundary
- Supply Well Location and Identification
- Ball Ranch Supply Well
- Silt Ponds
- Conveyance Ditch
- River Supply Ditch

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N 0 600 1,200 2,400 Feet

Plant Site Surface Water Features and Wells
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Figure 4.10-2

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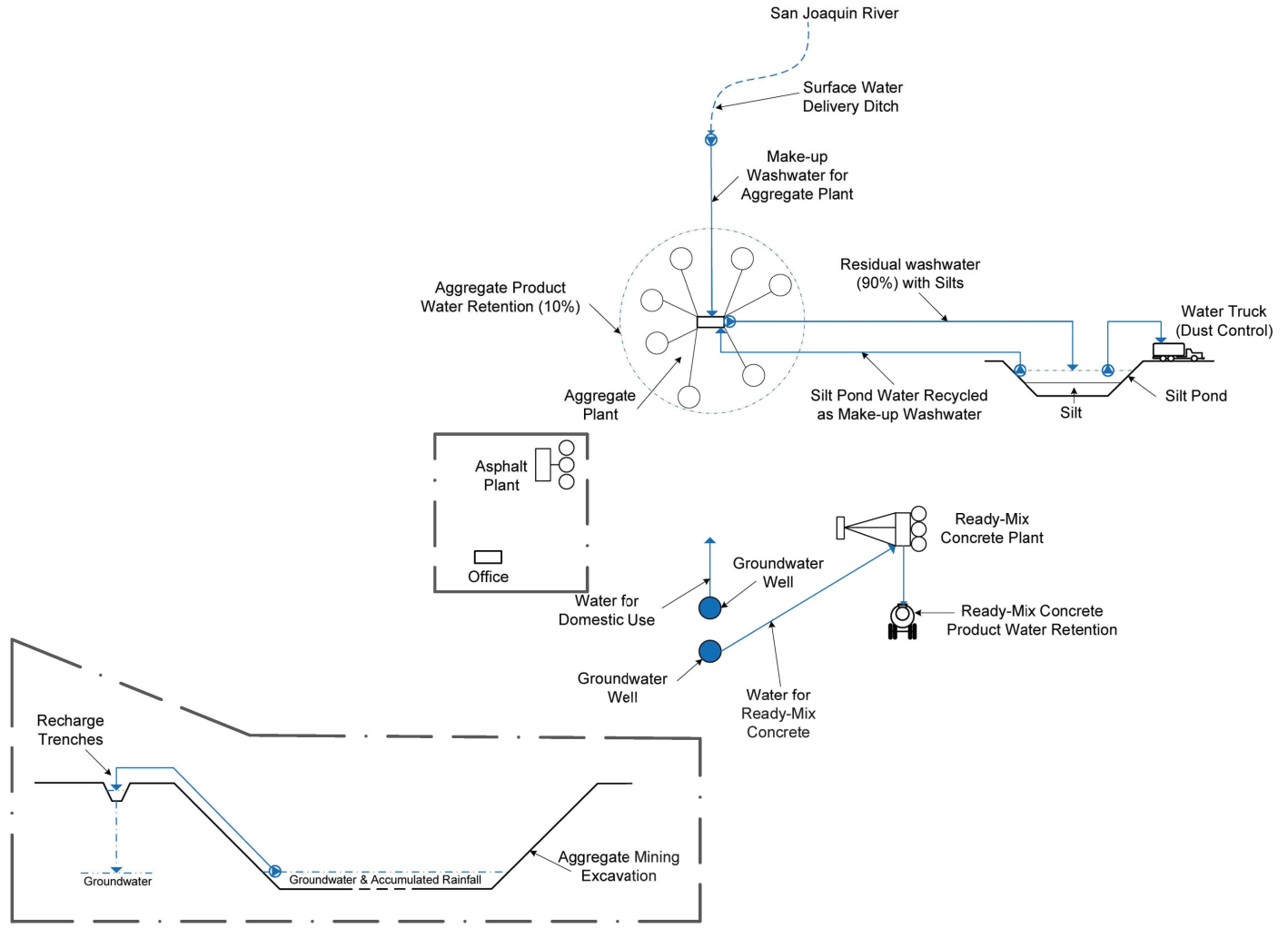

Surface Mining and Reclamation Plan - Oct 2021

CEMEX
Rockfield Modification Project
Plant Site – Proposed
Water Flow Diagram
275,000 Tons/Yr – Mining with Aggregate Processing, Ready-Mix Concrete & Asphalt Plants

SOURCE: CEMEX , Exhibit G-2; compiled by Benchmark Resources in 2023

Direction of Water Flow

Pump

Additional Water Flow Due to Proposed Project

Plant Site Existing and Proposed Water Flow Diagram

ROCKFIELD MODIFICATION PROJECT
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Figure 4.10-3

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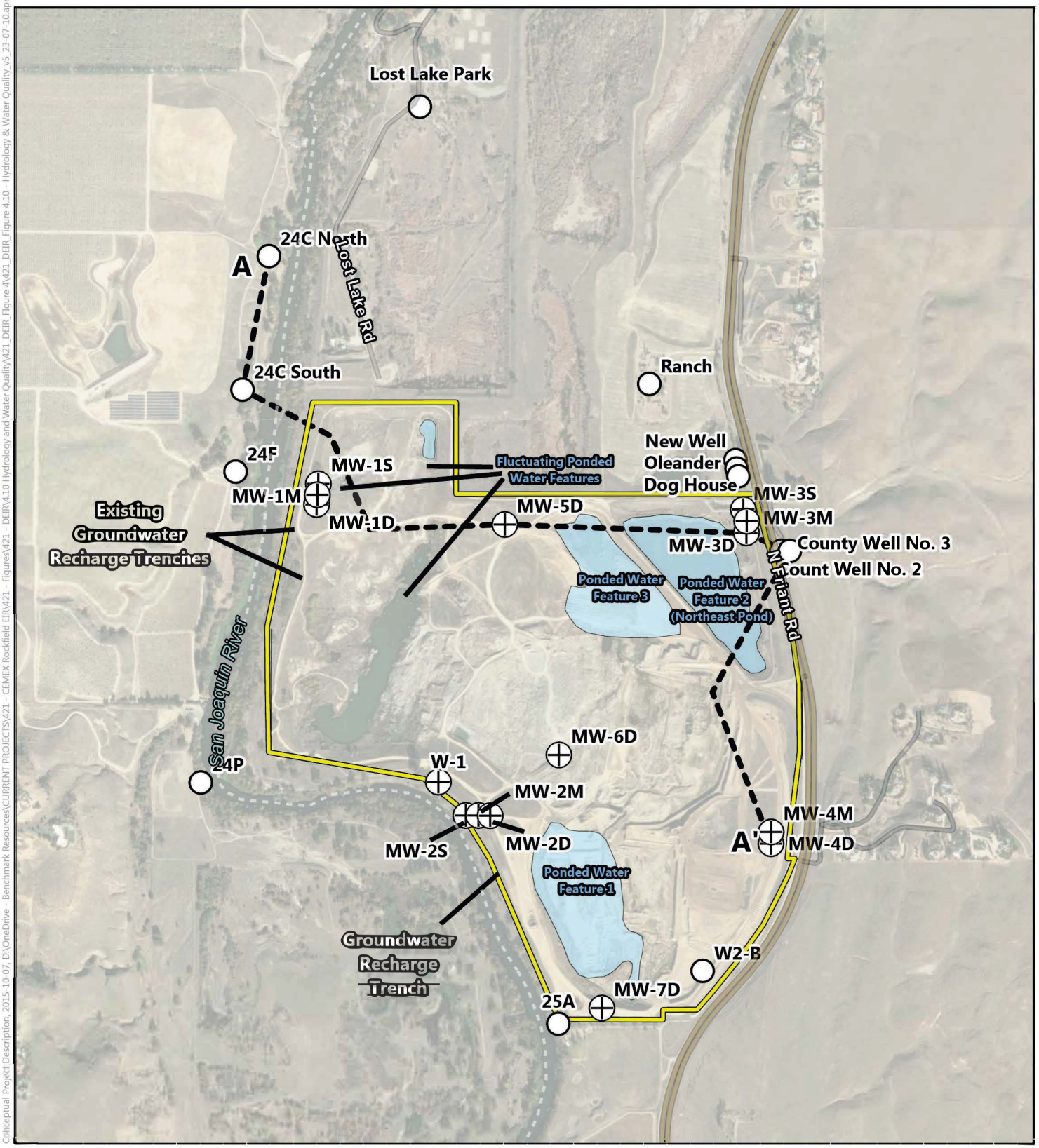

SOURCES: Site Boundary/Ponded Water–Bauda Associates, Inc., July 2023; Cross Section/Wells–digitized from KDSA 2020/EMKO 2023, Recharge Trenches digitized from CEMEX 2021; Aerial–Maxar, dated 11-29-2022; compiled by Benchmark Resources in 2023

Parcels Owned by CEMEX

Subsurface Geologic Cross Section A-A'
(See Figure 4.10-9 for Cross Section Shown)

County Boundary

Ponded Water

Monitor Well Location and Identification

Supply Well Location and Identification

BENCHMARK RESOURCES

0 400 800 1,600 Feet

Quarry Site Surface Water Features and Wells
ROCKFIELD MODIFICATION PROJECT
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Figure 4.10-4

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Water from the ponds is used by water trucks for dust control and is pumped to the groundwater recharge pond in the northeast corner of the Quarry Site or is pumped to existing groundwater recharge trenches along the western boundary of the Quarry Site. The existing process for water use on the Quarry Site is shown schematically in Figure 4.10-5, "Quarry Site Existing and Proposed Water Flow Diagram." Existing total consumptive use at the Quarry Site (including both direct groundwater use and indirect loss of rainfall/groundwater through evaporation and evapotranspiration) is estimated to be 440 acre-feet/year.

4.10.1.5 Flood Hazards

Flood hazards may occur in Fresno County from localized and riverine flooding caused by precipitation or flooding caused by dam failure or a controlled release from a dam (Fresno County 2018a).

Localized and Riverine Flooding

Regulatory Flood Maps

The Federal Emergency Management Agency (FEMA) prepares Flood Insurance Rate Maps (Flood Maps) that delineate the areas of known special flood hazards and associated applicable risks to the community. According to FEMA Flood Maps #06019C1030H and #06019C1040H, the San Joaquin River adjacent to the Plant Site and Quarry Site is mapped as both a 100-year Zone AE floodplain and regulatory floodway (FEMA 2009a and 2009b). A 100-year floodplain is the area that has a 1-in-100 (1%) chance of being flooded in any given year based on historical data and hydraulic modeling. A Zone AE floodplain and associated regulatory floodway are based on detailed engineering analyses. The floodway and floodplain are shown in Figure 4.10-1. As shown in Figure 4.10-1, the San Joaquin River floodway generally does not encroach onto the Plant Site or Quarry Site, but the floodplain encroaches on the west side of both sites. With regards to the Plant Site, the floodplain does encroach onto a small portion of the northwest corner of the Plant Site that contains a stockpile area.

Little Dry Creek is approximately 475 feet or more north of the Plant Site. The creek flows in a westerly direction and joins the San Joaquin River approximately one-half mile west of the Plant Site. According to FEMA Flood Map #06019C1040H, a Zone A floodplain along the creek encroaches onto the northerly portion of the Plant Site; FEMA has not determined a floodway for Little Dry Creek (FEMA 2009b). A Zone A floodplain is determined from approximate methods and is not based on detailed engineering analyses.

According to FEMA Flood Map #06019C1040H, there is also a FEMA Zone A floodplain that encroaches onto the southerly portion of the Plant Site (FEMA 2009b). This Zone A floodplain is isolated with no apparent connectively to the San Joaquin River, Little Dry Creek, or any other watercourse. The Little Dry Creek Zone A floodplain and the southern floodplain are shown in Figure 4.10-1.

Current Flood Maps

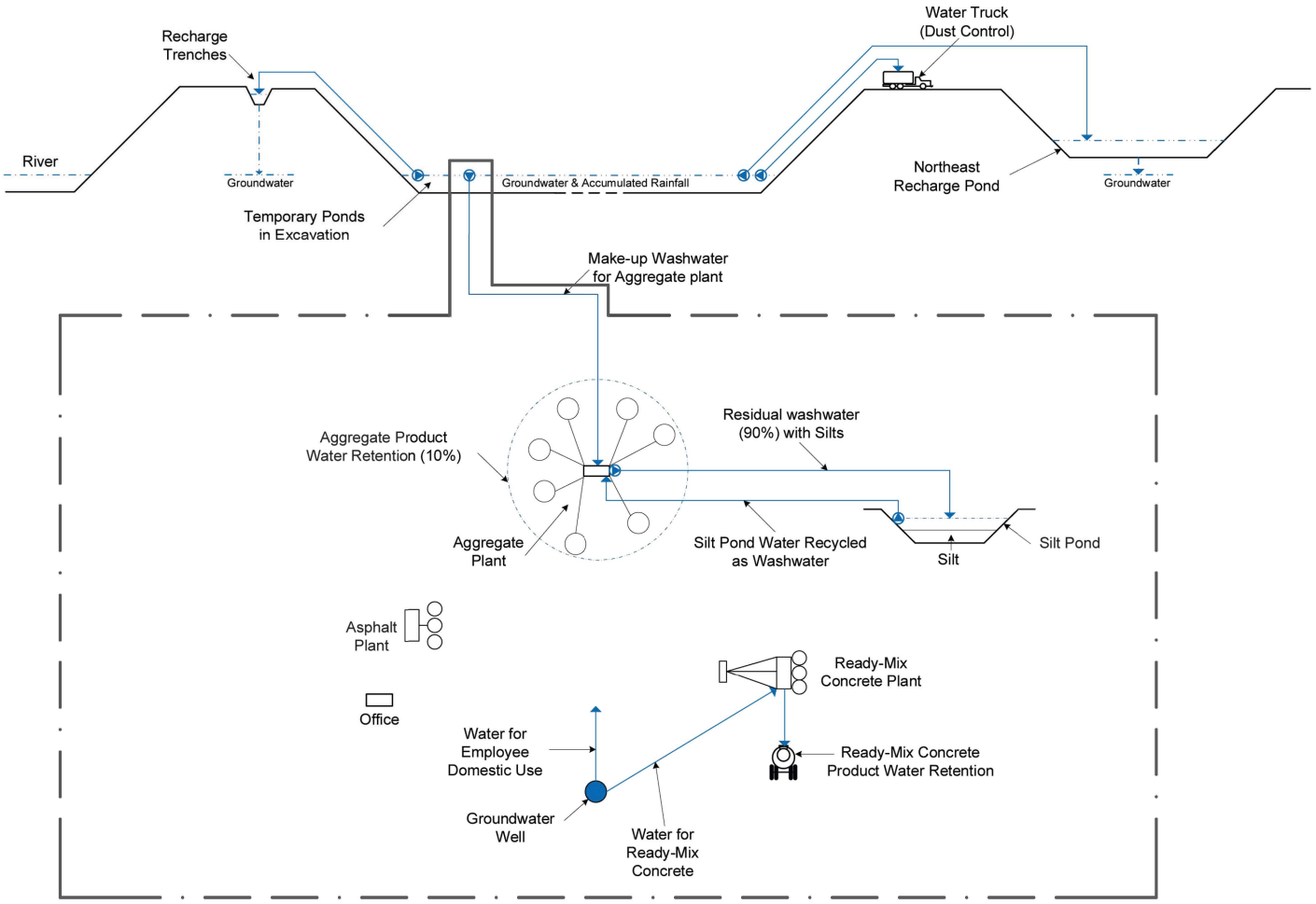
The FEMA studies on which the Flood Maps are based were performed over 20 years ago (the initial studies were completed in 1981 with updates from Friant Dam to Highway 99 in 1998). Consequently, an updated hydraulic analysis (Appendix G-1) was completed to estimate floodplain changes that may have occurred as a result of physical changes within and surrounding the project sites, particularly changes that occurred as a result of the development of berms along the project site's boundaries. The analysis methodology is summarized in Section 4.10.3.2, "Analysis Methodology," and described in detail in Appendix G-1.

The results of the analysis are shown in Figure 4.10-1 as the "Current 100-Year Floodplain." The analysis indicates that the current San Joaquin River 100-year floodplain does not encroach onto the Quarry Site. Similarly, the San Joaquin River 100-year floodplain does not encroach onto the Plant Site, except where the San Joaquin River water is delivered to the Plant Site via a delivery ditch that terminates just inside the western boundary and except at small portions on the northwest corner of the Plant Site that contains stockpiled aggregate.

The results of the analysis of the Little Dry Creek 100-year floodplain indicate that the berms along the northern boundary of the plant site prevent the little Dry Creek floodplain from encroaching onto the Plant Site. Similarly, the berm along the south property line of the Plant Site prevents the southern floodplain (not associated with any known water course) from encroaching onto the Plant Site.

Controlled Release from Dam

The project sites are located downstream of Friant Dam, a concrete dam that forms the Millerton Lake reservoir. Millerton Lake has a storage capacity of 520,400 acre-feet. The Bureau of Reclamation owns and manages the dam, and, during unforeseen events, may be required to release water into the San Joaquin River at rates that could exceed the river channel capacity (Fresno County 2018a).



CEMEX
Rockfield Modification Project
Quarry Site – Full Operations (Year 30)
Water Flow Diagram
3.0 MTY – Mining with Aggregate, Ready-Mix Concrete &Asphalt Plants

Surface Mining and Reclamation Plan - Oct 2021

SOURCE: CEMEX , Exhibit G-4; compiled by Benchmark Resources in 2023

Direction of Water Flow

Pump

MTY Million Tons per Year

Additional Water Flow Due to Proposed Project

Quarry Site Existing and Proposed Water Flow Diagram

ROCKFIELD MODIFICATION PROJECT
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Figure 4.10-5

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Dam Failure

Dam failure analysis and mapping has not been conducted for Friant Dam, located upstream of the Project Site, by either DWR (2024) or the USGS (2024).

Other Flood Hazards

The Project Sites are at elevations greater than 250 feet msl and are not subject to coastal hazards such as tsunami and sea level rise.

A seiche is a standing wave caused by a temporary disturbance or oscillation of the water level in a body of water. Seiches occur most frequently in enclosed or semi-enclosed basins such as lakes, bays, or harbors. They can be triggered in an otherwise still body of water by strong winds, changes in atmospheric pressure, earthquakes, tsunami, or tides. Based on the earthquake risk, weather, and physical characteristics of lakes in Fresno County, seiche is not considered a risk in the county (Fresno County 2018a).

4.10.1.6 Surface Water Quality

The quality of surface water and groundwater in the vicinity of the project site is affected by past and current land uses within the watershed and by the composition of geologic materials in the vicinity. The State Water Resources Control Board (SWRCB) and nine regional water quality control boards regulate the quality of surface water and groundwater bodies throughout California. In Fresno County, the Central Valley Regional Water Quality Control Board (RWQCB) is responsible for implementing the *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* (Basin Plan) (RWQCB 2019). The Basin Plan establishes beneficial water uses for waterways and water bodies within the region and is a master policy document for managing water quality in the region. The existing and proposed beneficial uses of the waterbodies to which the project site drains are shown in Table 4.10-1, "Beneficial Uses."

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Table 4.10-1
Beneficial Uses

Surface Water Bodies	MUN	AGR	PROC	REC-1	REC-2	WARM	COLD	MIGR		SPWN		WILD
	Municipal and Domestic Supply	*Agriculture—Irrigation and Stock Watering*	*Industry—Process Supply*	*Water Contact Recreation (including Canoeing and Rafting)*	*Other Noncontact Recreation*	*Warm Freshwater Habitat*	*Cold Freshwater Habitat*	*Warm Freshwater Fish Migration*	*Cold Freshwater Fish Migration*	*Warm Freshwater Spawning*	*Cold Freshwater Spawning*	*Wildlife Habitat*
San Joaquin River—Friant Dam to Mendota Pool	E	E	E	E	E	E	E	E	E	E	P	E
San Joaquin River—Mendota Dam to Sack Dam	P	E	E	E	E	E	--	E	E	E	P	E
San Joaquin River—Sack Dam to Mouth of Merced River	P	E	E	E	E	E	--	E	E	E	P	E

Table Source: RWQCB 2019.
Table Notes: E = existing beneficial use. P=potential beneficial use. -- = not a beneficial use.

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Surface Water Quality Impairment and Total Maximum Daily Loads

Water quality impairment, as defined in the Clean Water Act (CWA) Section 303(d), for the waterbodies to which the project site drains are identified in Table 4.10-2, "Water Quality Impairments." These impaired bodies are listed as Category 5 in the SWRCB Integrated Report (2020) (proposed to be updated in 2028), which includes waters where at least one beneficial use is not supported, and a Total Maximum Daily Load (TMDL) is required. On a broad level, the TMDL process leads to a "pollution budget" designed to restore the health of a polluted body of water. The TMDL process provides a quantitative assessment of the sources of pollution contributing to a violation of the water quality standards and identifies the pollutant load reductions or control actions needed to restore and protect the beneficial uses of the impaired waterbody.

Table 4.10-2
Water Quality Impairments

Water Body	2018 303(d) List of Water Quality Impairments *(Included under SWRCB Integrated Report Category 5)*	TMDL Status
San Joaquin River—Friant Dam to Mendota Pool	Invasive species and pH	TMDLs still required.
San Joaquin River—Mendota Pool to Bear Creek	Boron, DDT, Pesticides, and Toxicity	TMDLs still required.
San Joaquin River—Bear Creek to Mud Slough	Arsenic, DDT, Electrical conductivity, Pesticides, Mercury, Total dissolved solids, and Toxicity	Toxicity is being addressed by an action other than a TMDL.
San Joaquin River—Mud Slough to Merced River	Boron, Chlorpyrifos, DDT, Diazinon, Electrical conductivity, Pesticides, Indicator bacteria, Mercury, Selenium, Toxicity	Chlorpyrifos, Diazinon, and Selenium are being addressed by an EPA approved TMDL. TMDLs still required for the remaining constituents.

Table Source: SWRCB 2020.
Table Notes: PCBs = Polychlorinated biphenyl; DDT = Dichlorodiphenyltrichloroethane; TMDL = Total Maximum Daily Load; EPA = U.S. Environmental Protection Agency.

Plant Site Surface Water Quality

The silt pond at the northeast corner of the Plant Site (shown in Figure 4.10-2), and the San Joaquin River adjacent to the Plant Site, were sampled in January 2020. Table 4.10-3, "Plant Site Surface Water Quality Data," presents the water quality sampling results. The results were compared to water quality standards based on the primary and secondary maximum contaminant levels (MCLs) for drinking water identified by the SWRCB (SWRCB 2018a and 2018b) and the Basin Plan limit for conductivity (RWQCB 2019).

Primary MCLs limit the levels of contaminants in drinking water that could be harmful to public health, while secondary MCLs regulate contaminants in drinking water that may cause cosmetic effects (such as tooth discoloration) or aesthetic effects (such as taste, odor, or color).

Table 4.10-3
Plant Site Surface Water Quality Data

Parameter	Units	San Joaquin River Sample	Silt Pond[a] Sample	Water Quality Standard
Calcium	**mg/L**	3	16	--
Magnesium	**mg/L**	<1	8	--
Sodium	**mg/L**	3	17	--
Potassium	**mg/L**	<1	4	--
Total Alkalinity	**mg/L**	30	60	--
Bicarbonate	**mg/L**	40	70	--
Carbonate	**mg/L**	<10	<10	--
Hydroxide	**mg/L**	<10	<10	--
Sulfate	**mg/L**	0.9	15.9	250[d]
Chloride	**mg/L**	2	26	250[d]
Dissolved Solids	**mg/L**	20	200	500[d]
Conductivity	**µmhos/cm**	39	**271**	150[b]
pH	**Std Units**	8.2	7.6	6.5 - 8.5[d]
Nitrate, as N	**mg/**	<0.2	0.3	10[c]
Arsenic (total)	**µg/L**	<2	**200**	10[c]
Arsenic (dissolved)	**µg/L**	1	4	
Copper (total)	**µg/L**	3	840	1300[c]
Copper (dissolved)	**µg/L**	<1	<1	
Iron (total)	**µg/L**	250	**477,000**	300[b,d]
Iron (dissolved)	**µg/L**	<30	<30	
Lead (total)	**µg/L**	0.3	**517**	15[c]
Lead (dissolved)	**µg/L**	<0.5	<0.5	
Manganese (total)	**µg/L**	9.7	**5,720**	50[b,d]
Manganese (dissolved)	**µg/L**	0.7	1.1	
Mercury (total)	**µg/L**	<0.02	0.03	2[c]
Mercury (dissolved)	**µg/L**	<0.02	<0.02	

Table Source: Water quality data based on values reported in EMKO 2023. Water quality standards based on RWQCB 2019, and SWRCB 2018a and 2018b.
Table Notes: Samples were collected on January 6, 2020.
-- = there is no water quality standard established for this constituent.
µg/L = micrograms per liter; mg/L = milligrams per liter; µmhos/cm = micromhos per centimeter.
Bold value with gray background indicates that constituent exceeds a water quality standard.

a. The silt pond is on the northeast corner of the Plant Site, as shown in Figure 4.10-2.
b. From Basin Plan (RWQCB 2019) Tables 3-1 and 3-6.
c. Primary drinking water Maximum Contaminant Level
d. Secondary drinking water Maximum Contaminant Level

The water in the silt pond typically is very turbid and contains a high level of suspended solids due to the aggregate washing process. The suspended solids are clays that consist of natural earth materials and minerals. As indicated in Table 4.10-3, the conductivity of the water in the silt pond exceeds the Basin Plan limit for the San Joaquin River below Friant Dam. However, the Basin Plan limit would only apply if water from the pond was to be discharged to the San Joaquin River, which is not proposed by the project. For the metals, both unfiltered and filtered samples (shown as "total" and "dissolved", respectively in Table 4.10-3) were analyzed. The unfiltered samples contain the suspended mineral solids and represent the total concentration of the metals in the water and the suspended solids. The filtered samples contain only metals dissolved in the water. The total concentrations of arsenic, iron, lead, and manganese from the unfiltered samples exceed their respective water quality standards, but the dissolved concentrations from the filtered samples do not. All parameters measured in the San Joaquin River sample are within typical ranges for natural surface waters (Hem 1989) and below the water quality standards.

Quarry Site Surface Water Quality

Three ponds on the Quarry Site and the San Joaquin River adjacent to the Quarry Site were sampled in May 2017. The ponds are shown as Ponded Water Features 1, 2, and 3 in Figure 4.10-4. Table 4.10-4, "Quarry Site Surface Water Quality Data," presents the water quality sampling results. The conductivity measurements for all three surface water ponds at the Quarry Site exceed the Basin Plan limit for the San Joaquin River below Friant Dam (RWQCB 2019). However, the Basin Plan limit would only apply to these ponds if water from the ponds was to be discharged to the San Joaquin River, which is not proposed by the project. The conductivity value in the Northeast Pond (Ponded Water Feature 2 in Figure 4.10-4) is below the secondary MCL of 900 micromhos per centimeter (μmhos/cm), consistent with the use of this pond for groundwater recharge. The pH values in the Northeast Pond (i.e., Ponded Water Feature 2) and Ponded Water Feature 3 are above the secondary MCL range. The elevated pH values are likely due to uptake of carbon dioxide and release of oxygen by aquatic plant growth in the ponds (Hem 1989; Livingstone 1963). All parameters measured in the San Joaquin River sample are within typical ranges for natural surface waters (Hem 1989) and well below the water quality standards.

Table 4.10-4
Quarry Site Surface Water Quality Data

Parameter	Units	San Joaquin River Sample	Ponded Water Feature 1[a]	Ponded Water Feature 2[a]	Ponded Water Feature 3[a]	Water Quality Standard
Boron	**mg/L**	<0.025	0.07	0.045	0.026	2[b]
Calcium	**mg/L**	2.9	16.5	17.1	21.2	--
Copper	**µg/L**	<2.9	<2.5	<2.5	<2.5	10[b]
Iron	**µg/L**	159	41.6	34.4	<25	300[b,d]
Magnesium	**mg/L**	0.66	20.3	19.5	15.1	--
Manganese	**µg/L**	3.2	35.5	7.5	14.1	50[b,d]
Potassium	**mg/L**	0.8	17.4	8.8	6.7	--
Sodium	**mg/L**	2.7	96.8	53.6	39.4	--
Zinc	**µg/L**	<25	<25	<25	<25	100[b]
Hardness	**mg/L**	10.1	125	123	115	--
Chloride	**mg/L**	1.8	48.5	48.8	33.8	250[d]
Fluoride	**mg/L**	<0.1	0.83	0.25	0.16	2[c]
Nitrate	**mg/L**	<0.5	<0.5	<0.5	0.74	45[c]
Nitrate as N	**mg/L**	<0.2	<0.2	<0.2	<0.2	10[c]
Sulfate	**mg/L**	1.1	6.5	10.9	37.9	250[d]
Bicarbonate	**mg/L**	7.1	261	82.3	121	--
Carbonate	**mg/L**	<2.0	<2.0	80.6	<2.0	--
Hydroxide	**mg/L**	<2.0	<2.0	<2.0	<2.0	--
Total Alkalinity	**mg/L**	7.1	261	163	121	--
Conductivity	**µmhos/cm**	31.3	**617**	**428**	**380**	150[b]
Total Dissolved Solids	**mg/L**	40	408	287	248	500[d]
pH	**std units**	6.54	8.46	**9.32**	**8.63**	6.5 - 8.5[d]

Table Source: Water quality data based on values reported in EMKO 2023. Water quality standards based on RWQCB 2019, and SWRCB 2018a and 2018b.

Table Notes: Samples were collected on May 25, 2017.

-- = there is no water quality standard established for this constituent.

µg/L = micrograms per liter; mg/L = milligrams per liter; µmhos/cm = micromhos per centimeter.

Bold value with gray background indicates that constituent exceeds a water quality standard.

a. The ponded water feature locations are shown in Figure 4.10-4. Ponded water feature 2 is the northeast groundwater recharge pond, the only permanent pond on the Quarry Site.
b. From Basin Plan (RWQCB 2019) Tables 3-1 and 3-6.
c. Primary Maximum Contaminant Level
d. Secondary Maximum Contaminant Level

4.10.1.7 Local Geologic and Groundwater Conditions

The geology of the project sites is primarily addressed in Section 4.7, "Geology and Soils," of this Draft EIR. The project sites are underlain by the Kings Subbasin, which is a subbasin of the San Joaquin Valley groundwater basin. A schematic of the location of the Kings Subbasin and underlying geology of the Central Valley, is shown in Figure 4.10-6, "Geology Underlying Central Valley and Kings Subbasin."

Based on geologic maps of the region, the San Joaquin River basin includes a cover of recent, Holocene-age (the current geological epoch, lasting from the present to 11,700 years before the present) and late Pleistocene-age (11,700 years to 129,000 years before the present) alluvial sediments which are in turn underlain by Mesozoic-age (66 to 252 million years before the present) plutonic rocks which are the main target of the Quarry Site expansion. Plutonic rocks are igneous rocks that solidified from a melt at great depths. The rocks have been classified principally as granite and granodiorite (Matthews and Burnett 1965).

Regional Groundwater Conditions

The Kings Subbasin is classified as a critically over drafted, high priority basin, according to the Sustainable Groundwater Management Act (SGMA) Basin Prioritization Dashboard (California Department of Water Resources [DWR] 2021).

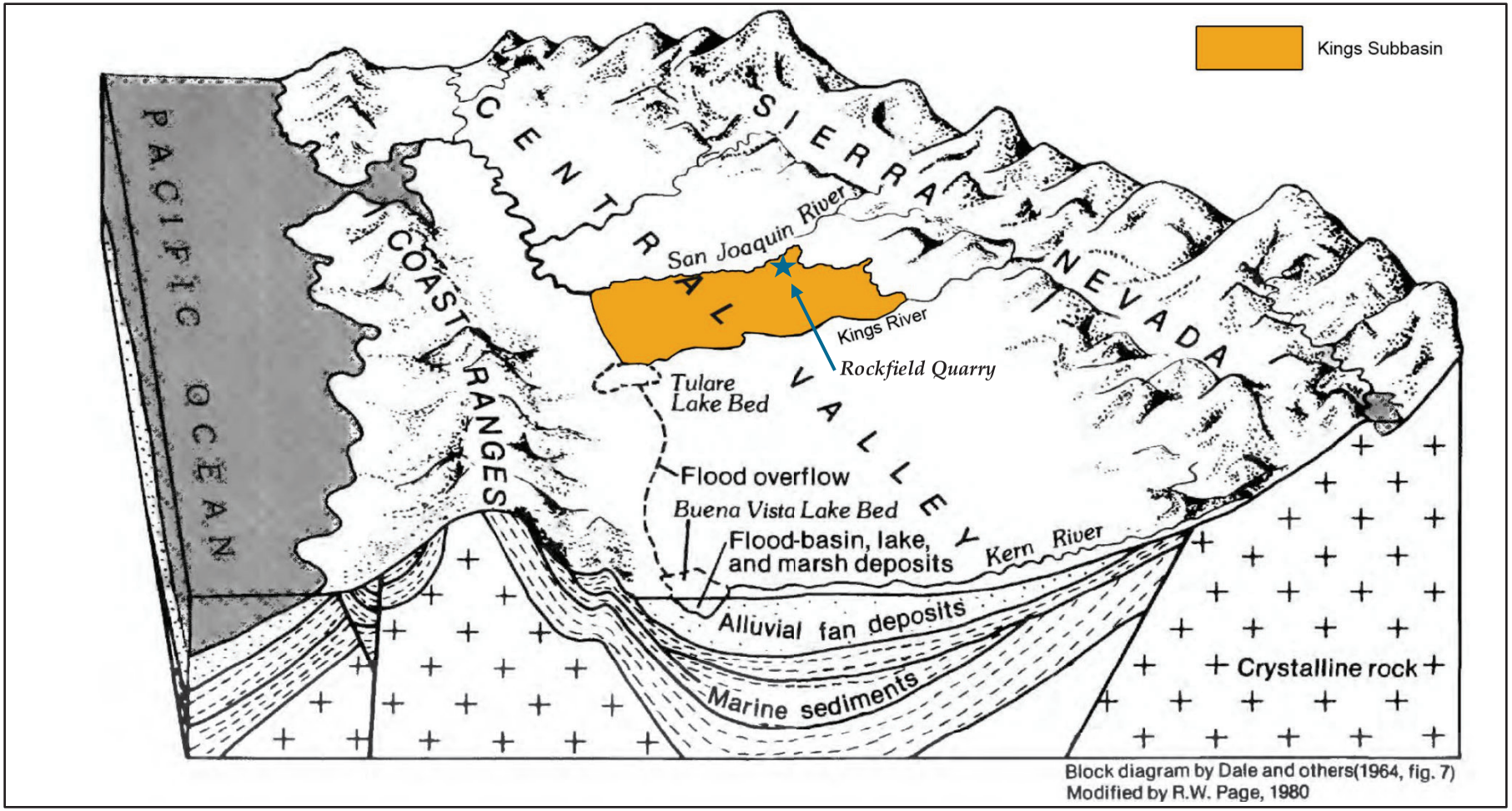
Over the period from 1997 to 2012, the average overdraft in the Kings Subbasin is estimated to be 122,000 acre-feet per year. The Kings Subbasin has seven Groundwater Sustainability Agencies (GSAs) responsible for meeting the SGMA requirement that medium- and high-priority basins halt groundwater overdraft and bring groundwater basins into balanced levels of pumping and recharge. The project site is located within the jurisdiction of the North Kings Groundwater Sustainability Agency (North Kings GSA) (North Kings GSA 2022). A more detailed discussion of the SGMA is provided in subsection "Sustainable Groundwater Management Act" of Section 4.10.2, "Regulatory Setting."

As shown in Figure 4.10-6, the Kings Subbasin is an alluvial basin bounded to the north and south by the San Joaquin and Kings Rivers, respectively; by the Sierra Nevada mountains on the northeast; and by the Westside and Delta-Mendota subbasins to the west-southwest. The primary groundwater aquifer units occur within alluvial (river) deposits of sand and gravel within the San Joaquin Valley to the west and southwest of the project sites. The vertical extent of the eastern one-quarter of the North Kings GSA aquifer system, where the Plant Site and Quarry Site are located, is limited vertically by the top of the plutonic bedrock.

As shown in Figure 4.10-7, "Kings Subbasin—Base of Aquifer," the depth of the bedrock is zero along the foothills and is about 800 feet below the ground surface (feet bgs) in the northeast Fresno-Clovis area. The vertical extent of the remaining western three-quarters of the North Kings GSA (west of the project sites) is limited vertically by the saltwater/freshwater interface. Figure 4.10-7 also shows that this interface is located at approximate depths ranging from 300 to 2,000 feet bgs (North Kings GSA 2022).

Groundwater in the Central Valley flows to the southwest away from the Sierra Nevada towards the valley floor. In areas near the San Joaquin River, seepage from the San Joaquin River, and the recharge ridge associated with seepage loss from the river, induce groundwater to flow away from the river to the south and southwest (North Kings GSA 2022).

The North Kings GSA includes both natural and constructed sources of recharge. Natural recharge occurs from seepage from the San Joaquin River, Kings River, and numerous intermittent streams. Natural recharge from percolation of precipitation is considered minor. Constructed sources of recharge include seepage in unlined canals, reservoirs, stormwater basins, wastewater effluent ponds, and recharge basins (North Kings GSA 2022). Deep percolation of agricultural and landscape irrigation also makes significant contributions to groundwater recharge. Near the project sites, the Millerton Reservoir, San Joaquin River, and Friant-Kern Canal are identified as significant sources of groundwater recharge to the North Kings GSA (North Kings GSA 2022). The water year in this region of California extends from October 1 of a calendar year to September 30 of the subsequent calendar year. This period better represents the normal climatic and rainfall cycles of the region than does a calendar year. For the 2016-2017 water year, the overall water balance in the Kings Subbasin was approximately -120,000 acre-feet (i.e., an overdraft of 120,000 acre-feet), while the water budget for the North Kings GSA part of the subbasin was approximately +40,000 acre-feet (North Kings GSA 2022, Table 3-9). The North Kings GSA was the only GSA within the Kings Subbasin to have a positive water balance during the 2016-2017 water year. However, a long-term average water budget for the period from 1997 to 2011 indicates an estimated annual change in groundwater storage of -6,500 acre-feet per year to -24,000 acre-feet per year for the North Kings GSA (Section 3.3.8 and Table 3-7 in North Kings GSA 2022,). Under normal year, dry year, and wet year conditions, referenced to conditions experienced during 2016-2017, the water balance within the North Kings GSA is projected be +39,200 acre-feet/year, -105,800 acre-feet/year, and +221,100 acre-feet/year (Table 3-10 in North Kings GSA 2022), respectively. Under normal year, dry year, and wet year conditions for historical conditions experienced from 1997-2011, the water balance within the North Kings GSA is projected be -6,500 acre-feet/year, -151,600 acre-feet/year, and +175,400 acre-feet/year, respectively (Table 3-8 in North Kings GSA 2022).



SOURCE: North Kings Groundwater Sustainability Agency, 2022; arranged by Benchmark Resources in 2023.
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Geology Underlying Central Valley and Kings Subbasin
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Figure 4.10-6

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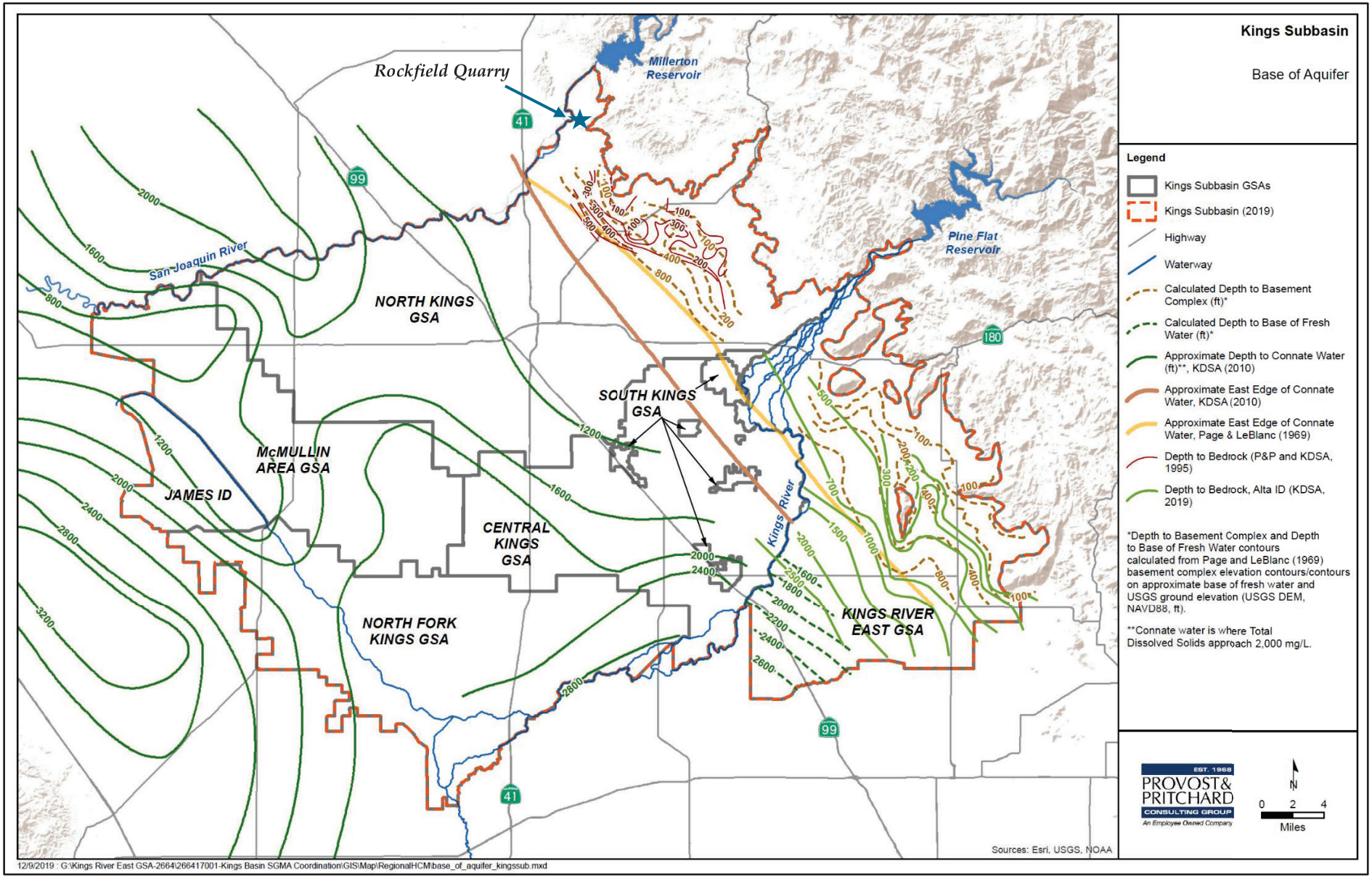

SOURCE: North Kings Groundwater Sustainability Agency, 2022; arranged by Benchmark Resources in 2023.
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Kings Subbasin—Base of Aquifer
ROCKFIELD MODIFICATION PROJECT
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Figure 4.10-7

BENCHMARK RESOURCES

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Although not considered part of the Kings Subbasin and not managed by the North Kings GSA, groundwater is also present in the granitic bedrock in the foothills and mountains east of the alluvial aquifers. Groundwater occurrence within the bedrock is highly variable and is dependent on the degree and nature of fracturing. Several communities and individual residences in the foothills and Sierra Nevada rely exclusively on groundwater from bedrock wells for their supply (EMKO 2023).

Plant Site Groundwater

The information in this discussion of groundwater conditions and water quality at the Plant Site is based on the Plant Site Groundwater Conditions Report (Appendix G-3), the revised *Hydrology and Water Quality Analysis Report* (Appendix G-5), and the Addendum to the Hydrology and Water Quality Analysis Report (Appendix G-6) unless otherwise noted.

Plant Site Groundwater Conditions

Groundwater within the Plant Site occurs within three geologic units: alluvium, weathered rock, and hardrock. Groundwater occurrence within bedrock is highly variable and is dependent on the degree and nature of fracturing. In the eastern portion of the North Kings GSA, where the Plant Site is located, the bedrock is considered to define the vertical limit of the groundwater aquifer. Mining at the Plant Site would only occur within the alluvium. Thus, the discussion below focuses on groundwater conditions within the alluvium.

Geologic and groundwater conditions at the Plant Site have been investigated by the installation of four alluvial monitoring wells and review of existing data from other onsite and adjacent wells. Pressure transducers with dataloggers were installed in the four monitoring wells to monitor fluctuations in groundwater elevation. The locations of the four alluvial monitoring wells (MW-1, MW-2, MW-3, and MW-4) are shown in Figure 4.10-2.

Coarse-grained deposits suitable for aggregate production extend to depths of 70 to 80 feet bgs at the Plant Site. The coarse-grained deposits are underlain by silts and clays. The weathered rock is about 20 to 30 feet thick. The top of the hardrock is about 150 feet bgs in the north part of the Plant Site and slopes toward the south. Figure 4.10-8, "Plant Site Cross-Section A-A'," presents a geologic cross that extends from the northeast to the southwest across the central part of the Plant Site section (Cross-Section A-A' shown in Figure 4.10-2) and illustrates the variations in thickness of the different geologic units present at the site.

The depth to groundwater varies from about 10 to 40 feet bgs. Seasonal fluctuations in water levels of up to 18 feet have been measured, with peak water levels generally occurring in June through September and minimum groundwater levels occurring in January. The water levels in the alluvium may be affected by flows in Little Dry Creek, water diversions to the site from the San Joaquin River, and the amount of water present in onsite silt ponds. Groundwater flow within the alluvium is oriented toward the southwest.

The estimated transmissivity and hydraulic conductivity of the alluvium at the Plant Site are 14,000 gallons per day per foot (gpd/ft) and 340 gallons per day per square foot (gpd/ft^2), respectively. These values are based on a 72-hour aquifer pumping test conducted by KDSA in 1995 on an alluvial well at the adjacent Ball Ranch site to the north of the Plant Site.

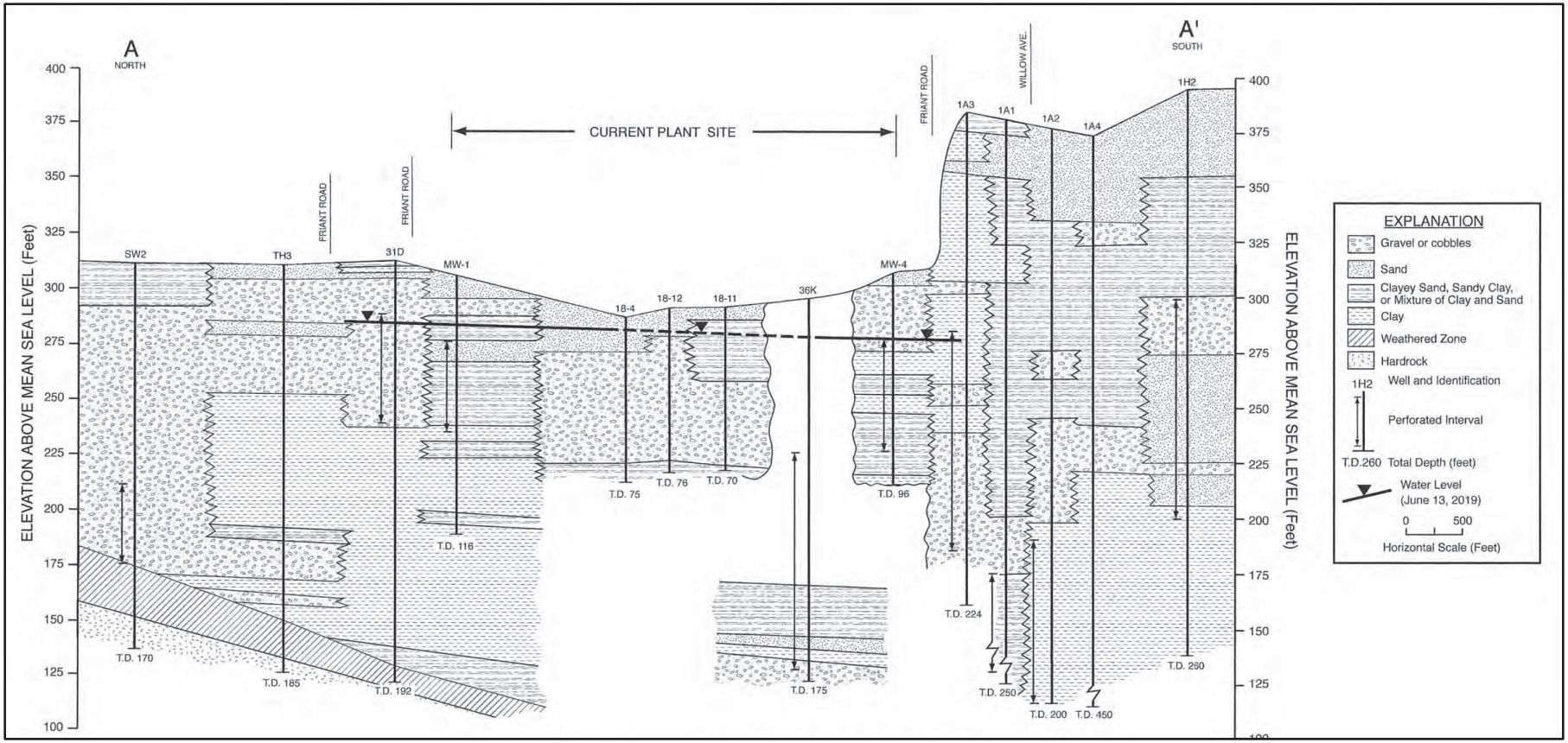
Based on the aquifer properties from the aquifer pumping test, the Plant Site Groundwater Conditions Report estimates that the groundwater flow under the Plant Site in the alluvium is approximately 105 acre-feet per year. Groundwater outflow is currently about 90 acre-feet per year. The difference is due to consumptive use such as ready-mix concrete production.

Groundwater Supply Wells in the Vicinity of the Plant Site

There are groundwater supply wells in the vicinity of the Plant Site. Groundwater supply well locations include the wells located in the floodplain north of the site; dozens of private domestic wells in the area between Friant Road and North Willow Avenue; and two public supply wells east of North Willow Avenue, about a half mile south of the Plant Site.

Quarry Site Groundwater

The information in this discussion of groundwater conditions and water quality at the Quarry Site is based on the Quarry Site Groundwater Conditions Report (Appendix G-4), the *Revised Hydrology and Water Quality Analysis Report* (Appendix G-5), and the Addendum to the Hydrology and Water Quality Analysis Report (Appendix G-6), unless otherwise noted.



SOURCE: KDSA 2020; arranged by Benchmark Resources in 2023.

Notes: The position of the cross-section on the Plant Site is shown on Figure 4.10-2. Image not printed to scale.

Plant Site Cross-Section A-A'

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Figure 4.10-8

BENCHMARK RESOURCES

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Quarry Site Groundwater Conditions

Similar to the Plant Site, groundwater within the Quarry Site occurs within three geologic units: alluvium, weathered rock, and hardrock. Groundwater occurrence within bedrock is highly variable and is dependent on the degree and nature of fracturing. In the eastern portion of the North Kings GSA, where the Quarry Site is located, the bedrock is considered to define the vertical limit of the groundwater aquifer.

Geologic and groundwater conditions at the Quarry Site have been investigated by the installation of four alluvial monitoring wells, four weathered rock monitoring wells, and seven hard rock monitoring wells. Pressure transducers with dataloggers were installed in these monitoring wells to monitor fluctuations in groundwater elevation. The locations of these wells are shown in Figure 4.10-4.

In most of the Quarry Site, the alluvium has been removed by mining. Where present, alluvium on the Quarry Site is up to 60 feet thick. Beneath the alluvium, the weathered rock ranges in thickness from 20 feet to 60 feet. The hard rock extends to at least 600 feet bgs, which is the maximum depth drilled at the Quarry Site. Figure 4.10-9, "Quarry Site Cross-Section A-A'," presents a geologic cross-section that extends from the northwest to the southeast across the central part of the Quarry Site (Cross-Section A-A' shown in Figure 4.10-4) and illustrates the variations in thickness of the different geologic units present at the site.

The depth to groundwater across the Quarry Site has been measured as varying from about 10 to 45 feet bgs (EMKO Environmental 2024). Seasonal fluctuations in water levels can be up to six feet, with the peak (i.e., shallowest) water levels generally occurring in April, at the end of the wet season, and minimum (i.e., deepest) groundwater levels occurring between October and December, at the end of the dry season. Fluctuations also occur in response to the cycles of drought that characterize California's climate. Groundwater levels decline during periods of drought. The Addendum to the Hydrology and Water Quality Analysis Report (Appendix G-6) review of 6 years of water level monitoring data (2018-2023) found that, regardless of the magnitude of water level decline in response to multiple years of drought from 2020 to 2022, groundwater levels increased rapidly due to the elevated rainfall that occurred during the 2023 water year. This increase was observed in all three geologic units (alluvium, weather rock, and hardrock) (EMKO Environmental 2024).

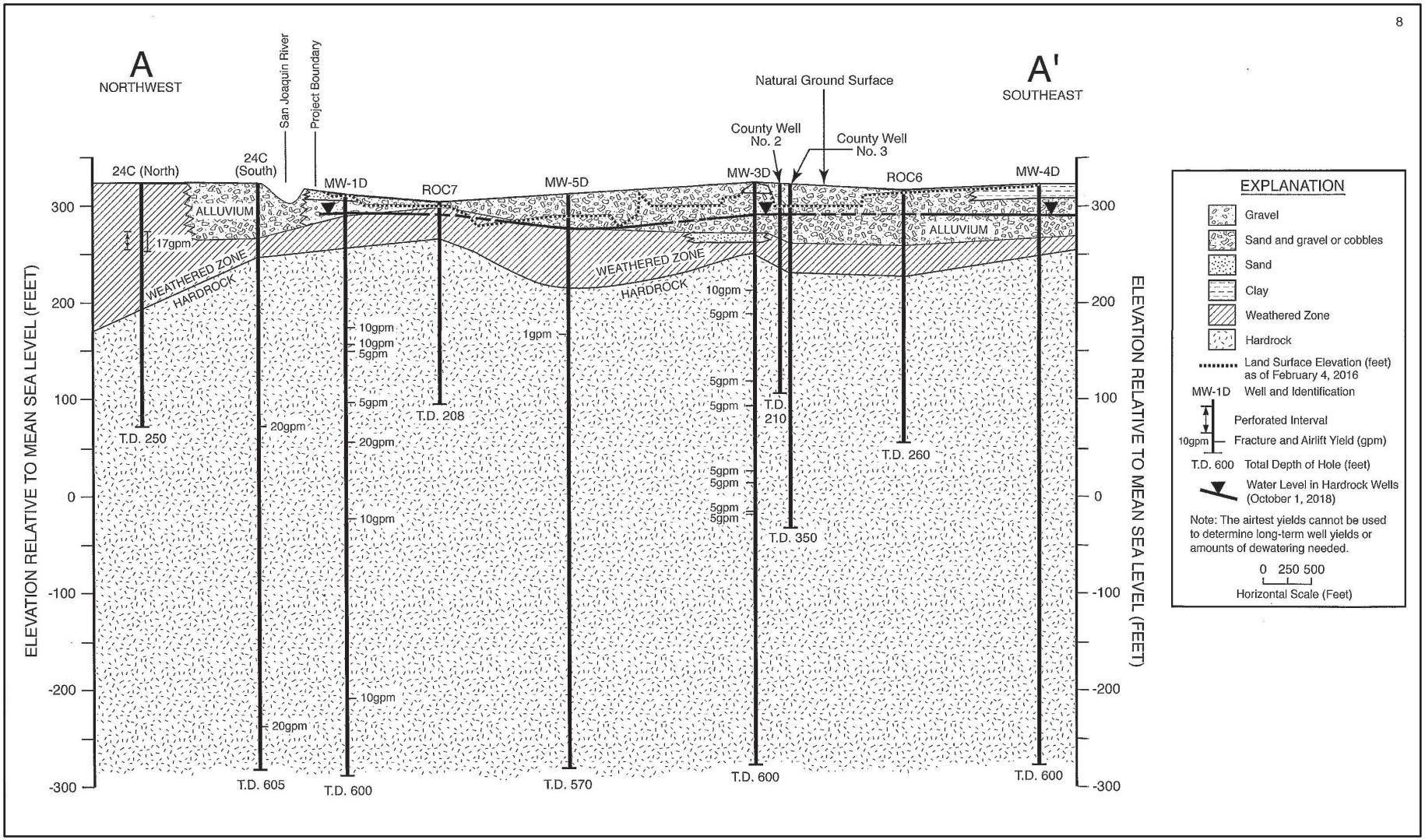
In general, the review of groundwater level data across the Quarry Site monitoring wells shows that water level variations in the weathered rock and hard rock tend to be comparable at locations where wells were installed into both zones. Water level

variations in the alluvium do not always correlate with those in the underlying weathered rock and hard rock, partially because the alluvium is not always saturated. The water level monitoring indicates that pumping at the Fresno County Community Service Area 44C (CSA 44C) supply wells CSA 44C No. 2 and CSA 44C No. 3 results in small but measurable water level fluctuations in the weathered rock and hard rock wells across the Quarry Site. Effects from other local pumping may also occur in the Quarry Site wells.

Groundwater flow within the alluvium is oriented toward the south or southeast, based on groundwater contour maps presented in Quarry Site Groundwater Conditions Report. Within the weathered rock and hard rock, groundwater flow is generally toward the southeast, southwest, or west. There is a local depression in the center of the Quarry Site, possibly due to on-going dewatering of the mining excavation.

Dewatering is currently occurring in the alluvium and partially in the weathered rock as part of quarry mining operations. Based on pumping records provided by the Applicant, in the 2018-2019 water year, a total of 330 acre-feet were pumped from the existing quarry pit. The dewatering rate from October 2018 to April 2019 ranged from 2.0 acre-feet per week to 15.1 acre-feet per week and averaged approximately 7.3 acre-feet per week. Approximately 95 percent of the water pumped from the mining excavation was sent to recharge trenches along the west side of the quarry, where it percolated back into the subsurface between the west edge of the quarry and the San Joaquin River. The other five percent was used for dust control and discharged to the Northeast Pond to support groundwater recharge.

Based on the aquifer properties from the airlift test, 72-hour constant-drawdown aquifer pumping tests, and step drawdown tests conducted at the Quarry Site groundwater monitoring wells, the Quarry Site Groundwater Conditions Report (see Appendix G-4) estimates that the groundwater flow under the Quarry Site in the alluvium and weathered rock is approximately 95 acre-feet per year. In the hard rock, the estimated groundwater flow under the site within the depth interval to be mined is estimated at 80 acre-feet per year. Thus, the total groundwater flow under the Quarry Site totals about 175 acre-feet per year. As noted by the Quarry Site Groundwater Conditions Report, discharge of treated wastewater from the Friant Ranch development project to the Beck Ranch property would increase the amount of recharge and groundwater flow to the north of the Quarry Site once that development project is completed.



SOURCE: KDSA 2021; arranged by Benchmark Resources in 2023.

Notes: The position of the cross-section on the Quarry Site is shown on Figure 4.10-4. Image not printed to scale.

Quarry Site Cross-Section A-A'
ROCKFIELD MODIFICATION PROJECT
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Figure 4.10-9

BENCHMARK RESOURCES

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Groundwater Supply Wells in the Vicinity of the Quarry Site

There are groundwater supply wells in the vicinity of the Quarry Site. These supply wells are located across the San Joaquin River west of the Quarry Site, and north, east, and south of the Quarry Site. Two of the supply wells located just east of North Friant Road are Fresno County supply wells CSA 44C No. 2 and CSA 44C No. 3 and are shown in Figure 4.10-4. The groundwater supply wells near the Quarry Site primarily tap factures in the hardrock. The following is a summary of the conditions of groundwater supply wells in the vicinity of the Quarry Site:

- **West of the San Joaquin River:**
  - Well 24C North has a total depth of 250 feet bgs and produces water from the weathered rock and the hard rock, with most of the yield from the weathered rock.
  - Well 24C South has a total depth of 605 feet bgs and produces water from the hard rock.
  - Well 24F has a total depth of 250 feet bgs and produces groundwater from the alluvium, weathered rock, and hard rock.
  - Two wells are located along Road 204 to the west of Killarney Drive. One well (204 East) extends to 850 feet bgs and produces from hard rock. The other well (204 West) extends to 277 feet bgs in alluvium and weathered rock but was dry.
- **Beck Ranch:**
  - Four wells are located in Beck Ranch with total depths ranging from 170 to 310 feet bgs; groundwater is produced from the weathered rock and the hard rock.
- **Lost Lake Park:**
  - One well is located in Lost Lake Park and has a total depth of 226 feet bgs; groundwater is produced from the alluvium, weathered zone, and hard rock.
- **CSA 44C No. 2 and No. 3 Wells:**
  - The two wells serving Fresno County CSA 44C range in depth from 210 to 350 feet bgs and produce water from the alluvium, weathered rock, and hard rock. The pumps in both wells are at a depth of 105 feet bgs.
- **North Friant Road:**
  - Approximately 12 private domestic wells are located along the east side of North Friant Road north of the CSA 44C Wells. These wells range in depth from 330 (North Friant B) to 760 (North Friant A) feet bgs and the depth to

water at the time the wells were installed ranged from approximately 80 feet to 90 feet bgs, within the hard rock.

4.10.1.8 Groundwater Quality

Regional Groundwater Quality

Groundwater quality in the North Kings GSA is affected by natural factors as well as agricultural, residential, and commercial/industrial practices. Water quality concerns within the subbasin include nitrate, arsenic, dibromochloropropane (DBCP), 1,2,3-trichloropropane (1,2,3-TCP), methyl tertiary butylether (MTBE), landfill leachate, uranium, solvent-related contaminants, and hexavalent chromium, which are all specifically identified in the North Kings Groundwater Sustainability Plan (North Kings GSA 2022). Some of these constituents are from anthropogenic (man-made) sources while others are naturally occurring. These water quality issues are not identified as occurring in proximity of the project sites (North Kings GSA 2022). The Kings Subbasin is located more than 100 miles from the Pacific Ocean, and there are no saline water lakes within or near the North Kings GSA. Therefore, saltwater intrusion is not a groundwater quality concern for groundwater in the vicinity of the project sites.

Groundwater Quality at the Plant Site

Groundwater samples were collected at the Plant Site from the four onsite monitoring wells during 3 monitoring events that occurred in 2018 and 2019. The groundwater quality sampling results for the Plant Site are summarized in Table 4.10-5, "Plant Site Groundwater Quality Data." Constituents analyzed in water samples for this project were selected based on surface water and groundwater water quality objectives identified in the Basin Plan and on specific analytes identified in Waste Discharge Requirements (WDRs) and Monitoring and Reporting Programs (MRPs) for other aggregate quarries in the Fresno County region (e.g., Carmelita Mine, Kaweah River Rock, Austin Quarry) (Buada Associates Inc. 2021).

As shown in Table 4.10-5, all constituents were generally within water quality standards except for iron, manganese, and conductivity. Radiological constituents are not shown in Table 4.10-5 but were below their respective maximum contaminant levels in all samples. Iron and manganese concentrations exceeded their respective Basin Plan standards secondary MCLs at least once in MW-2, MW-3, and MW-4. However, the iron and manganese concentrations vary substantially between sampling events. Thus, the occasional elevated levels of iron and manganese identified in some of the samples from Plant Site wells MW-2, MW-3, and MW-4 most likely represent naturally occurring concentrations in the suspended solids within the samples and may be the result of variability in sampling procedures.

Conductivity levels for Plant Site wells MW-1, MW-2, MW-3, and MW-4 exceeded the Basin Plan conductivity limit for the San Joaquin River below Friant Dam (RWQCB 2019). The Basin Plan limit would only apply if groundwater was to be discharged directly to the San Joaquin River, which is not proposed by the project. The conductivity levels in all of the Plant Site monitoring wells were below the secondary MCL of 900 µmhos/cm.

Groundwater Quality at the Quarry Site

Groundwater samples were collected at the Quarry Site in September and October 2021. During these two sampling events, groundwater was not present in the alluvium at the locations of wells MW-1S and MW-2S.

The groundwater sampling results are summarized in Table 4.10-6, "Quarry Site Groundwater Quality Data." All constituents in the groundwater at the Rockfield Quarry were within water quality standards, except for the following:

- Nitrate in MW-2M, MW-2D, and MW-6D;
- Manganese in MW-1D, MW-3S, and MW-4D; and
- Gross alpha activity in MW-2M.

The concentrations reported in Table 4.10-6 represent existing baseline conditions in the groundwater at the Quarry Site and are not indicative of potential project effects. The nitrate is likely a relic of past agricultural activity in the area because there has been no use of any constituents at the Quarry Site to date that could release nitrates. Manganese is a naturally occurring mineral component within the geologic materials at the site.

In the sample from MW-2M, the gross alpha activity is appreciably greater than the sum of the activity reported for the common alpha particle emitters uranium, radium 226, and radium 228. For all other samples, the sum of the alpha activity reported for the common alpha particle emitters ranges from at least 50% to over 90% of the gross alpha activity, whereas for MW-2M the sum of the alpha activity from the common emitters is about 30% of the gross alpha activity. Thus, the gross alpha result for MW-2M may not be representative of site conditions.

Table 4.10-5
Plant Site Groundwater Quality Data

Monitoring Well ID[a]:		MW-1			MW-2			MW-3			MW-4			Water Quality Standard
Date Sampled:		*8/7/18*	*1/25/19*	*8/28/19*	*8/9/18*	*1/25/19*	*8/28/19*	*10/17/18*	*1/25/19*	*8/28/19*	*10/24/18*	*1/30/19*	*8/28/19*	
Parameter	**Units**													
Boron	mg/L	<0.1	--	<0.1	<0.1	--	<0.1	<0.1	--	<0.1	<0.1	--	<0.1	1[e]
Calcium	mg/L	33	--	37	37	--	28	39	--	10	29	--	41	--
Copper	µg/L	<10	<2.5	<10	<10	<2.5	<10	<10	<2.5	<10	<10	<2.5	<10	1300[d]
Iron	µg/L	<30	--	<30	**530**	--	<30	<30	--	**2600**	<30	--	40	300[b,c]
Magnesium	mg/L	11	--	12	12	--	11	14	--	3	12	--	17	--
Manganese	µg/L	50	--	<10	**790**	--	<10	**2600**	--	**1030**	**300**	--	<10	50[b,c]
Potassium	mg/L	3	--	4	4	--	4	3	--	1	2	--	2	--
Sodium	mg/L	27	--	24	23	--	23	22	--	8	17	--	17	--
Zinc	µg/L	<20	--	<20	<20	--	<20	<20	--	<20	<20	--	<20	5000[c]
Arsenic	µg/L	--	<2	<1	--	<2	<1	--	4.3	10	--	2	2	10[d]
Mercury	µg/L	--	<0.2	<0.02	--	<0.2	<0.02	--	<0.2	<0.02	--	<.2	<0.02	2[d]
Lead	µg/L	--	<1.5	<0.5	--	<1.5	<0.5	--	1.6	<0.5	--	<1.5	<0.5	15[d]
Hardness	mg/L	128	--	142	142	--	115	155	--	37.3	122	--	172	--
Chloride	mg/L	24	--	22	20	--	20	20	--	3	7	--	6	250[c]
Fluoride	mg/L	0.1	--	<0.1	<0.1	--	0.1	0.2	--	<0.1	0.4	--	0.3	2[d]
Nitrate	mg/L	11	--	7.2	<0.4	--	0.6	11.6	--	<0.4	<0.4	--	<0.4	45[d]
Nitrate as N	mg/L	2.5	--	1.6	<0.1	--	0.1	2.6	--	<0.1	<0.1	--	<0.1	10[d]
Sulfate	mg/L	15.8	--	14	17.3	--	10.3	18.9	--	0.8	5.3	--	3.2	250[c]
Bicarbonate	mg/L	150	--	190	180	--	160	170	--	60	160	--	220	--
Carbonate	mg/L	<10	--	<10	<10	--	<10	<10	--	<10	<10	--	<10	--
Hydroxide	mg/L	--	--	<10	--	--	<10	--	--	<10	--	--	<10	--
Total Alkalinity	mg/L	120	--	160	140	--	130	140	--	50	--	--	180	--
Conductivity	µmhos/cm	**373**	--	**411**	**378**	--	**351**	**405**	--	124	**307**	--	**390**	150[b]/900[c]

Monitoring Well ID[a]:		MW-1			MW-2			MW-3			MW-4			Water Quality Standard
Date Sampled:		8/7/18	1/25/19	8/28/19	8/9/18	1/25/19	8/28/19	10/17/18	1/25/19	8/28/19	10/24/18	1/30/19	8/28/19	
Parameter	Units													
Total Dissolved Solids	mg/L	275	--	310	293	--	257	299	--	86	130	--	306	500[c]
pH	std units	7.6	--	7.2	7.7	--	6.8	7.7	--	6.7	8	--	6.8	6.5 - 8.5[c]

Table Source: Water quality data based on values reported in EMKO 2023. Water quality standards based on RWQCB 2019, and SWRCB 2017, 2018a, and 2018b.
Table Notes: -- = there is no water quality standard established for this constituent.
µg/L = micrograms per liter; mg/L = milligrams per liter; µmhos/cm = micromhos per centimeter.

a. The locations of the monitoring wells are shown in Figure 4.10-4.
b. From Basin Plan (RWQCB 2019) Tables 3-1 and 3-6.
c. Secondary Maximum Contaminant Level.
d. Primary Maximum Contaminant Level.
e. California Notification Level (applies to constituents without an established Maximum Contaminant Level).

Table 4.10-6
Quarry Site Groundwater Quality Data

Monitoring Well ID[a]	MW-1M	MW-1D	MW-2M	MW-2D	MW-3S	MW-3M	MW-3D	MW-4M	MW-4D	MW-5D	MW-6D	MW-7D	Water Quality Standard
Date Sampled	9/14/21	10/14/21	9/15/21	9/15/21	9/8/21	9/8/21	9/8/21	9/21/21	10/14/21	10/14/21	9/21/21	10/14/21	
GENERAL MINERALS (mg/L)													
Total Alkalinity	146.0	157	91.3	133.0	64.0	50.6	51.6	116.0	122	92.1	85.5	51.7	--
Bicarbonate	146.0	157	89.5	133.0	64.0	50.6	51.6	116.0	122	88.9	85.5	51.7	--
Carbonate	ND	ND	2.0	ND	ND	ND	ND	ND	ND	3.0	ND	ND	--
Hydroxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Calcium	30.9	43.2	26.2	38.4	13.4	10.4	10.2	23.1	25.5	13.3	24.5	9.0	--
Magnesium	11.4	16.8	16.9	15.8	7.1	4.8	4.6	11.7	12.4	3.1	5.7	1.7	--
Potassium	3.49	9.26	7.93	7.10	6.26	5.22	4.43	6.94	10.8	10.90	7.77	6.08	--
Sodium	29	16	30	26	18	15	17	22	24	51	59	36	--
Chloride	29.9	26.8	11.8	17.6	9.1	7.6	6.9	9.6	9.9	27.2	11.6	16.2	250[c]
Fluoride	0.249	ND	0.152	0.184	0.154	0.148	0.151	0.179	0.152	0.125	0.127	0.166	2[d]
Sulfate	7.3	10.4	28.0	23.3	12.2	8.7	8.3	8.3	9.4	22.2	45.1	24.1	250[c]
Nitrate as N	0.8	0.4	**24.1**	**16.4**	5.5	4.6	4.6	5.6	7.3	ND	**22.3**	ND	10[d]

Monitoring Well ID[a]	MW-1M	MW-1D	MW-2M	MW-2D	MW-3S	MW-3M	MW-3D	MW-4M	MW-4D	MW-5D	MW-6D	MW-7D	Water Quality Standard
Date Sampled	*9/14/21*	*10/14/21*	*9/15/21*	*9/15/21*	*9/8/21*	*9/8/21*	*9/8/21*	*9/21/21*	*10/14/21*	*10/14/21*	*9/21/21*	*10/14/21*	
Nitrite as N	ND	ND	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	1[d]
MBAS	ND	ND	ND	ND	0.31	ND	0.061	ND	ND	ND	ND	ND	500[c]
Total Dissolved Solids	223	250	313	333	227	167	153	232	215	173	330	125	500[c]
pH	7.4	7.3	8.3	7.3	7.7	7.8	7.7	7.7	7.7	8.4	8.0	8.0	6.5 - 8.5[c]
Specific Conductance (µmhos/cm)	**382**	**401**	**482**	**492**	**224**	**181**	**178**	**314**	**338**	**312**	**473**	**211**	150[b]/900[c]
METALS (µg/L)													
Aluminum	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000[d]
Antimony	ND	2.4	ND	ND	ND	ND	ND	ND	0.86	ND	ND	1.4	6[d]
Arsenic	ND	ND	1.3	3.0	0.68	1.2	1.4	1.7	ND	ND	3.3	4.8	10[d]
Barium	ND	126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000[d]
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4[d]
Boron	29	32	30	33	14	15	12	24	19	31	36	32	2,000[b]
Cadmium	ND	0.047	0.040	0.060	ND	ND	ND	0.069	0.041	0.10	0.038	ND	5[d]
Copper	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10[b]
Iron	ND	ND	ND	ND	ND	ND	ND	ND	140	130	ND	170	300[c]
Lead	ND	0.031	0.044	ND	0.20	ND	ND	ND	ND	ND	0.084	0.028	15[d]
Manganese	220	**60**	30	ND	**210**	ND	50	20	**150**	40	20	20	50[b,c]
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	0.048	ND	ND	0.054	2[d]
Molybdenum	3.8	0.47	1.1	0.77	2.7	5.0	6.2	4.3	3.8	16	3.8	23	--
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100[d]
Selenium	ND	ND	ND	ND	0.31	0.44	0.58	ND	ND	0.80	1.10	ND	50[d]
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10[d]
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2[d]
Zinc	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100[b]

Monitoring Well ID[a]	MW-1M	MW-1D	MW-2M	MW-2D	MW-3S	MW-3M	MW-3D	MW-4M	MW-4D	MW-5D	MW-6D	MW-7D	Water Quality Standard
Date Sampled	*9/14/21*	*10/14/21*	*9/15/21*	*9/15/21*	*9/8/21*	*9/8/21*	*9/8/21*	*9/21/21*	*10/14/21*	*10/14/21*	*9/21/21*	*10/14/21*	
RADIONUCLIDES (pCi/L)													
Gross Beta	4.27	2.44	4.36	4.82	3.49	4.38	3.18	4.14	1.69	3.07	5.06	2.26	--
Strontium-90	0.77	0.57	0.77	1.54	0.36	1.01	1.42	1.54	1.29	2.54	1.50	1.52	8[d]
Tritium	715	87	212	326	79	61	106	ND	423	284	114	371	20,000[d]
Gross Alpha	9.53	5.59	**20.39**	7.69	6.34	8.32	13.19	13.64	5.64	3.83	10.22	4.38	15[d]
Uranium	6.34	2.6	2.76	4.34	2.67	3.55	6.57	9.62	4.34	3.02	4.55	3.00	20[d]
Radium 226	1.69	0.06	1.77	1.47	0.60	0.87	2.63	2.20	0.38	0.30	1.77	0.77	5[d]
Radium 228	1.82	0.21	1.93	1.55	1.64	1.14	1.04	0.94	0.47	0.79	0.58	0.00	

Table Source: Water quality data based on values reported in EMKO 2023. Water quality standards based on RWQCB 2019, and SWRCB 2017, 2018a, and 2018b.

Table Notes:

-- = there is no water quality standard established for this constituent.

µg/L = micrograms per liter

mg/L = milligrams per liter

µmhos/cm = micromhos per centimeter

ND = constituent concentration below detection limit

Bold value with gray background indicates that constituent exceeds a water quality standard.

a. The locations of the monitoring wells are shown in Figure 4.10-6.
b. From Basin Plan (RWQCB 2019) Tables 3-1 and 3-6.
c. Secondary Maximum Contaminant Level.
d. Primary Maximum Contaminant Level.
e. California Notification Level (applies to constituents without an established Maximum Contaminant Level).

4.10.1.9 Groundwater-Surface Water Interaction at the Quarry Site

The information in this discussion of groundwater-surface water interactions at the Quarry Site is based on the Quarry Site Groundwater Conditions Report (Appendix G-4) and the *Hydrology and Water Quality Analysis Report* (Appendix G-5), unless otherwise noted. With regard to groundwater-surface water interaction at the Quarry Site, based on a review of available data, the evaluations' conclusions are summarized as follows:

- The flow of water in the San Joaquin River is primarily determined by discharges from the Millerton Reservoir, which are controlled by the Friant Dam, rather than by precipitation.
- Groundwater levels at the Quarry Site and its vicinity are relatively stable but do fluctuate in response to rainfall and river flows. The relative stability of groundwater is hypothesized to be primarily the result of the continuous recharge of groundwater in the area due to recharge from the Friant-Kern Canal, and in part due to recharge of groundwater from the San Joaquin River.
- The flow of water from the San Joaquin River to groundwater at the Quarry Site through the alluvium, weathered rock, and hard rock does occur but is limited and inconsistent due to variations in the elevations of the alluvium versus the elevations of water in the San Joaquin River and due to the variability in the degree and nature of fracturing in the weathered rock and hard rock.
- Groundwater infiltration from alluvium to weathered rock and hardrock, is limited due to the low hydraulic conductivity of the weathered rock and hard rock as compared to the alluvium; however, some groundwater infiltration does occur and is dependent on the degree and nature of fracturing of the weathered rock and hard rock.

The discussion below presents the information on which this understanding of groundwater-surface water interactions at the Quarry Site are based.

San Joaquin River Connectivity to the Quarry Site

The primary surface water bodies that affect groundwater conditions at and near the Quarry Site area are the San Joaquin River and the Friant-Kern Canal.

The flow and stage of the San Joaquin River are reported by the California Department of Water Resources below the community of Friant (gauge station SJF). The river stage is the height, or depth, of the water in the river, above the elevation of the gauge at which the measurement is recorded. As the flow in a river increases, so does the stage. Thus, stage and flow have a proportional relationship defined by a rating curve developed for that specific gauge location.

The stage data for the San Joaquin River can be used to identify conditions or periods when the water surface in the San Joaquin River is above the geologic contact between the alluvium and underlying weathered rock. This is an important relationship to groundwater-surface water interactions at the Quarry Site because the alluvium at the Quarry Site has a much higher transmissivity (i.e., permeability) than the underlying weathered rock and hard rock. Thus, when the stage of the river is high enough that the water surface is above the base of the alluvium, there is a higher potential for seepage of water from the river into the Quarry Site.

At the MW-1 well cluster, which is located near the river in the northwest portion of the Quarry Site (shown in Figure 4.10-4), the ground surface elevation is 310 feet msl. The depth to the weathered rock at this location is approximately 20 feet bgs. Thus, the base of the alluvium/top of the weathered rock is at an elevation of approximately 290 feet msl, which is similar to the 290.0 feet above msl elevation of the San Joaquin River channel adjacent to the northwest portion of the Quarry Site (Chang 2020b). As a result, the San Joaquin River flows are always in contact with the alluvium (which overlies the weathered rock) in this segment of the river.

At the MW-2 well cluster, which is located near the San Joaquin River in the meander area toward the central/southern end of the Quarry Site (shown in Figure 4.10-4), the ground surface elevation is 319 feet above msl. The depth to weathered rock is approximately 30 feet bgs. Thus, the base of the alluvium/the top of the weathered rock is at an elevation of approximately 289 feet above msl, almost identical to the elevation of the alluvium/weathered rock contact at the MW-1 well cluster. The elevation of the San Joaquin River channel adjacent to this area of the Quarry Site is approximately 286.5 feet above msl (Chang 2020b). Thus, for water to flow from the river and into the alluvium any appreciable distance, the San Joaquin River stage needs to be somewhat higher than 2.5 feet to create a sufficient hydraulic gradient, or slope, away from the river and toward the well location. The water level data for well MW-2S, screened only in the alluvium, shows that the well does not contain water except during periods when the San Joaquin River stage is greater than 4 feet. A review of river stage data from January 2014 to February 2023 indicates that the San Joaquin River stage measurements exceeded 4 feet for approximately 13 percent of the January 2014 to February 2023 time period.

Surface Water and Groundwater Sources Indicated by Stable Isotope Data

In May 2017, KDSA collected water samples for the analysis of stable isotopes of water from the Quarry Site. Samples were obtained from two alluvial wells, four weathered rock wells, four hard rock wells, three onsite ponds, and the San Joaquin River. Stable isotopes are naturally occurring components of water. The relative abundance of stable isotopes changes with elevation, distance from the ocean, and other factors such that

stable isotopes can be used as a tracer to infer sources of runoff and groundwater recharge.

The stable isotope data were evaluated and interpreted by EMKO (2017). That evaluation indicates that the water sampled from the wells, ponds, and San Joaquin River has a common origin as snow or rain that fell high in the Sierra Nevada range before flowing via surface water channels (i.e., streams, rivers, and manmade channels), and as groundwater, towards the project site. This indicates that the local rainfall is not the primary source of groundwater at the Quarry Site and that local rainfall is not a primary source of water in the San Joaquin River. Although not a primary source of groundwater at the Quarry Site, it should be noted that local rainfall can still affect groundwater levels and river flows, and that the stable isotope samples were not collected during a rainfall event.

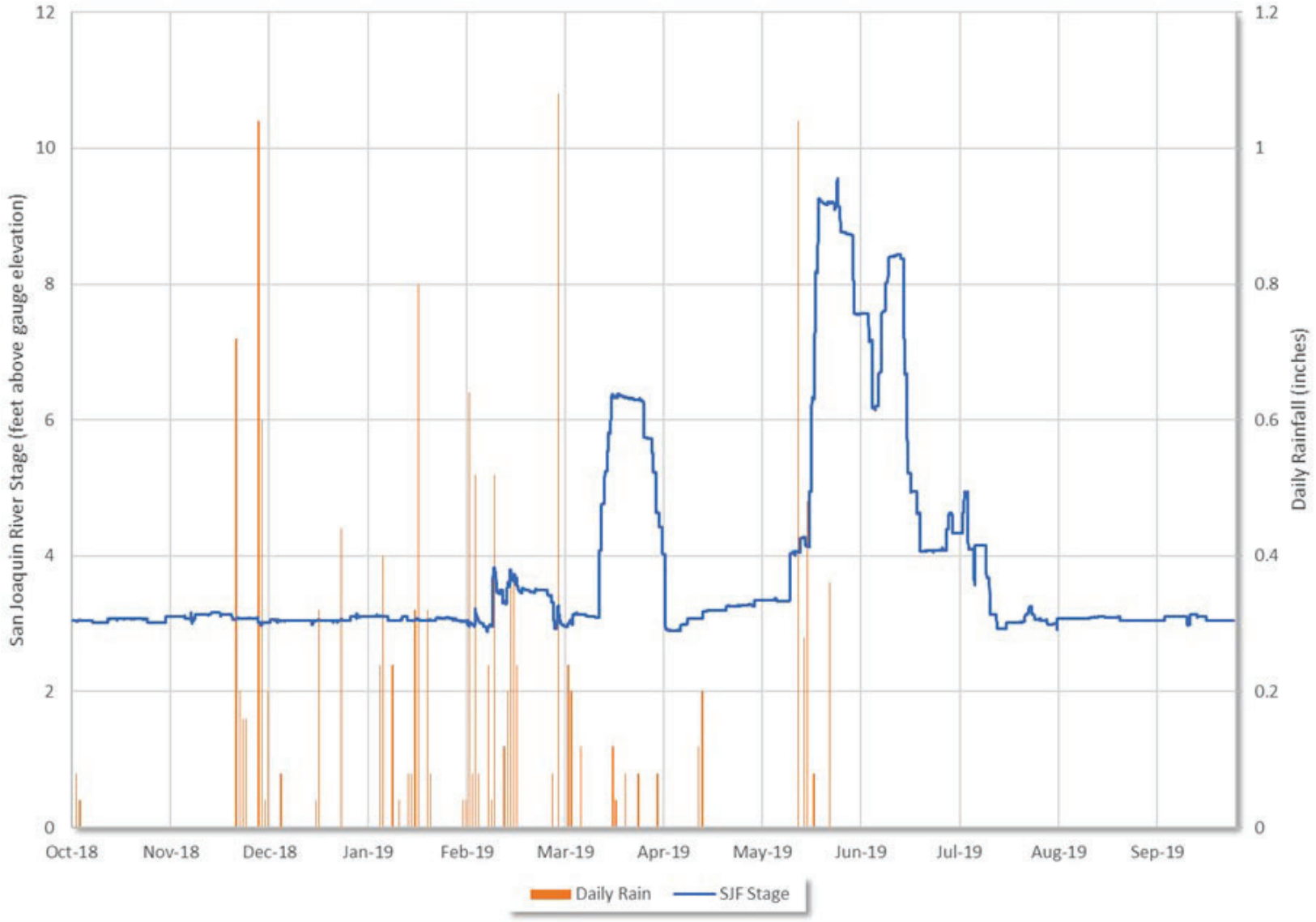
Relationship Between San Joaquin River Stage and Precipitation

Stage and flow in the San Joaquin River are primarily controlled by water releases from Millerton Lake through Friant Dam. These releases are made in response to flood control, irrigation, and environmental requirements, which are often unrelated to the amount of rainfall occurring at the time of the release. Figure 4.10-10, "Comparison of San Joaquin River Stage and Daily Rainfall," presents data from the 2018-2019 water year to illustrate that there is no consistent correlation between the San Joaquin River stage and precipitation, which confirms the importance of releases of water from Millerton Lake in the control of river stage and flow. This is consistent with the stable isotope analysis results, as water from Millerton Lake flows to this reservoir from snow and rain that falls in the Sierra Nevada.

Relationship between Groundwater Levels, River Stage, and Precipitation

Groundwater levels in monitoring wells at the Quarry Site are relatively stable but do fluctuate in response to precipitation patterns and the San Joaquin River stage. Figure 4.10-11, "Comparison of Groundwater Levels to Daily Rainfall and River Stage," presents two charts that compare groundwater levels to daily rainfall (Chart 1) and San Joaquin River stage data (Chart 2) for the 2018-2019 water year.

Chart 1 of Figure 4.10-11 shows that the groundwater levels in all three wells at the MW-1 cluster, and in MW-2M and MW-2D, began to rise in response to storm events that occurred in late November and early December 2018. The groundwater levels in these five wells continued to rise through late March, after which the groundwater levels began to decline. However, the groundwater levels rose again in response to several rain events in mid-May 2019 before declining again in mid-June through the end of the water year.



SOURCE: EMKO 2023; arranged by Benchmark Resources in 2023.
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Comparison of San Joaquin River Stage and Daily Rainfall
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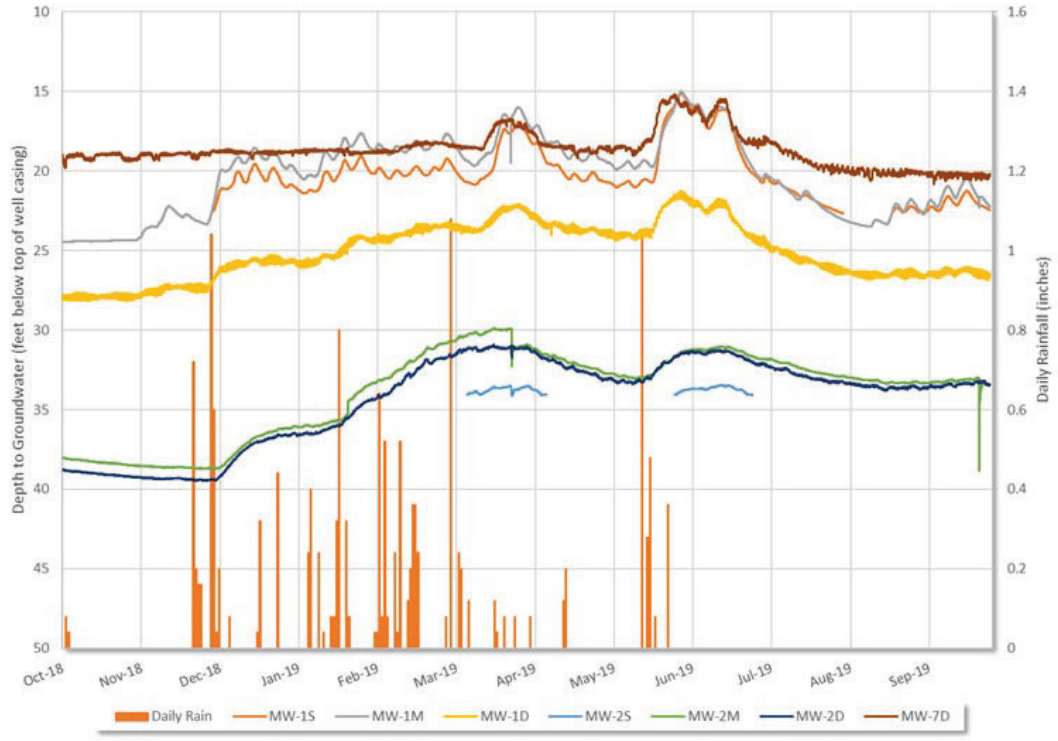

CHART 1: COMPARISON OF GROUNDWATER LEVELS TO DAILY RAINFALL

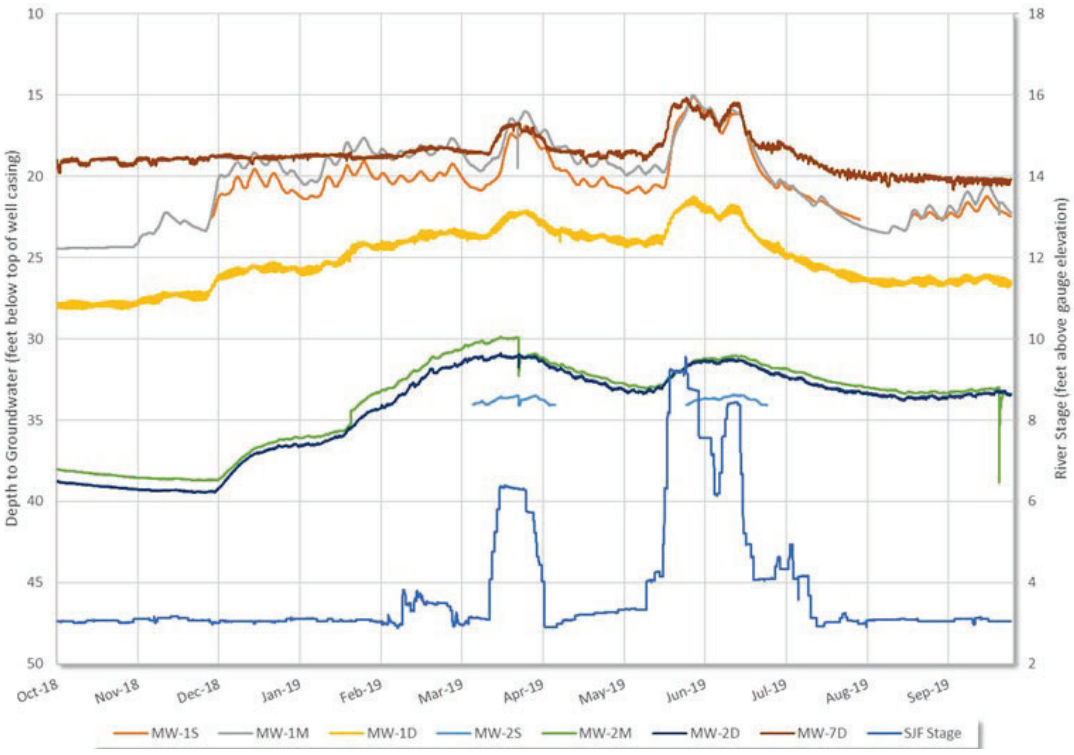

CHART 2: COMPARISON OF GROUNDWATER LEVELS TO RIVER STAGE

SOURCE: EMKO 2023; arranged by Benchmark Resources in 2023.
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The groundwater levels in MW-2S and MW-7D did not rise in response to any of the rainfall events in November 2018 through February 2019.

Chart 2 of Figure 4.10-11 compares the San Joaquin River stage with groundwater levels. Substantial increases in San Joaquin River stage occurred for approximately three weeks in mid-March to early April 2019 and for approximately five weeks from mid-May to late June 2019. Groundwater levels in well MW-2S and MW-7D, which did not show a response to rainfall, do show a response to these two rises in the San Joaquin River stage, with water levels rising between 1 to 3 feet. As discussed above, the San Joaquin River stage must rise several feet before groundwater is present in the alluvium at well MW-2S.

Additionally, water levels in all three wells at the MW-1 cluster (MW-1S, -1M, -1D) rose in response to the two rises in the San Joaquin River stage, on top of being responsive to rain events. MW-2M and MW-2D do not appear to be affected by increases in river stage. The variable response of wells in the weathered rock and hard rock at well clusters MW-1, MW-2, and MW-7 reflects the fact that groundwater flow through weathered rock and hard rock varies depending on the degree and nature of fracturing.

Charts 1 and 2 of Figure 4.10-11 also show relatively minor fluctuations in water levels at the monitoring wells, with the difference between minimum and maximum elevations measured being approximately 10 feet or less. This relative stability is consistent with the long-term data set evaluated for two nearby offsite wells. One well is an old windmill well located east of the Quarry Site, just north of the County's CSA 44C wells. Alluvium is not present at that location, so the old windmill well is completed in the weathered rock, hard rock, or both. The second well is located on the Beck Ranch property north of the Quarry Site. It is reported to be 310 feet deep and is screened in the hard rock. Groundwater level data is available from 1952 to 1971 in the windmill well and from 1948 to 1971 in the Beck Ranch well. This data is presented in Figure 4.10-12, "Groundwater Level Data for Offsite Wells Near the Quarry Site." With only a few minor exceptions, the groundwater levels in the two offsite wells do not vary by more than 10 feet over the 20 or more years that data were collected. In addition, neither well exhibits any consistent long-term trend.

The data from the longer period of record for the offsite wells corroborates the conclusion that, while local rainfall and increased river flows or stages may have short-term effects on the groundwater levels in the weathered rock and hard rock at the Quarry Site and its vicinity, such effects are minor and do not persist.

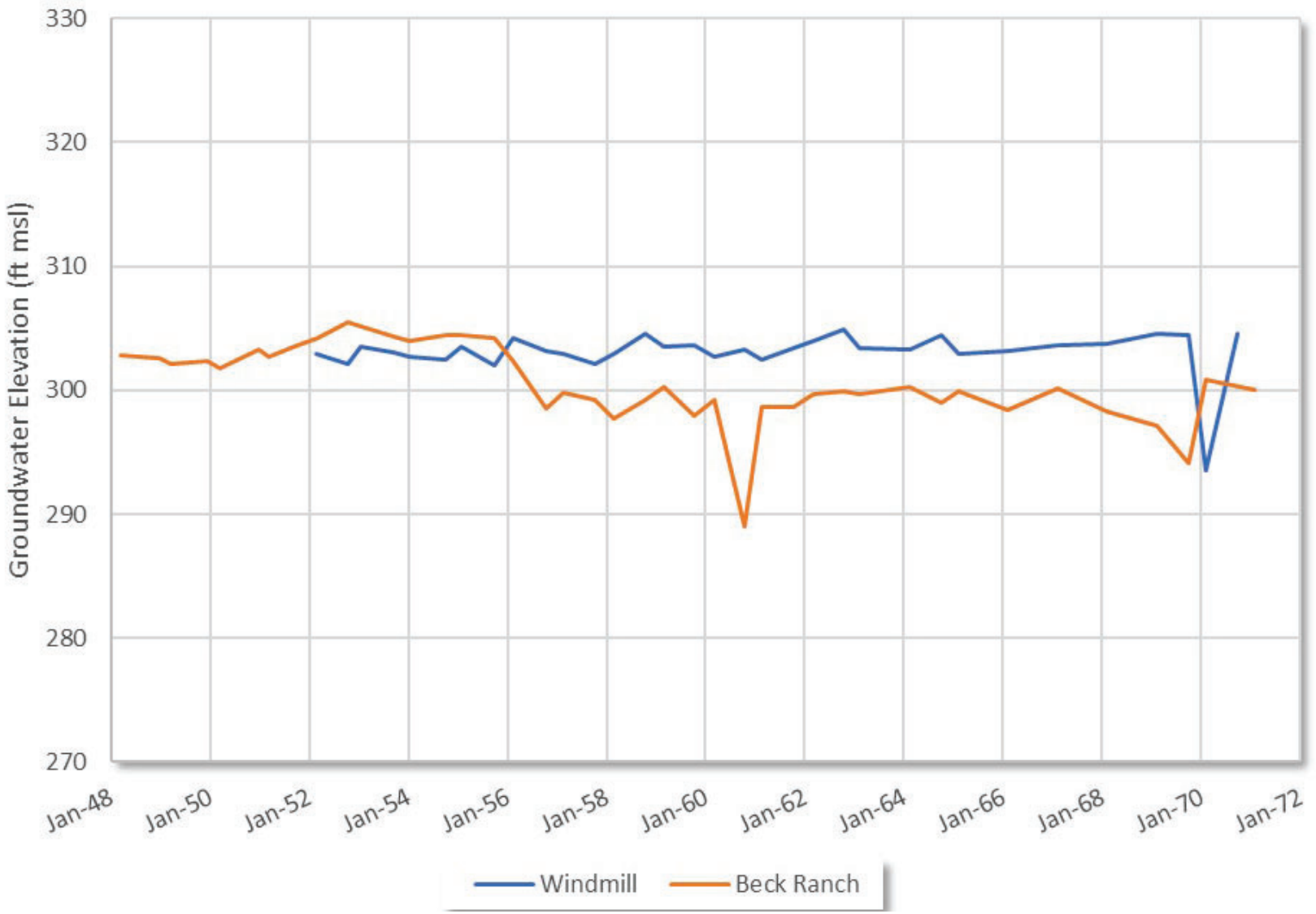
Relationship between Groundwater Flow Direction and Potential Sources of Groundwater at the Quarry Site

The Quarry Site Groundwater Conditions Report (Appendix G-4) indicates that the groundwater flow direction in the weathered rock and hard rock varies from being toward the southeast, southwest, and west. When the San Joaquin River flows are toward the southeast, the river may be acting as the primary recharge source. However, when the San Joaquin River flows are toward the southwest and west, leakage from the Friant-Kern Canal, which draws water from Millerton Lake, may be the predominant source of recharge. Although the Friant-Kern Canal is lined in the area to the northeast of the project site, leakage may still occur through cracks and other irregularities.

The *Hydrology and Water Quality Analysis Report* (Appendix G-5) notes that the median flow in the San Joaquin River is 394 cfs, while diversions to the canal are in the range of 4,200 cfs. Thus, leakage from the canal flows, which flow year-round, are likely an important source of groundwater recharge to the areas in the vicinity of the Friant-Kern Canal, including the Quarry Site. This is consistent with the *Groundwater Sustainability Plan* for the North Kings GSA, which identifies both the San Joaquin River and the Friant-Kern Canal as significant sources of groundwater recharge to the North Kings GSA (North Kings GSA 2022).

Magnitude of San Joaquin River Contribution to Water Flow to the Quarry Site

Dewatering of surface water runoff from rainfall and groundwater is currently occurring in the excavations in alluvium and the weathered rock at the Quarry Site. Based on pumping records provided by the applicant, during the 2018-2019 water year, a total of 330 acre-feet were pumped from the existing mining excavation. Figure 4.10-13, "Comparison of Weekly Dewatering Rates with Daily Rainfall and River Stage," presents a comparison of dewatering rates with rainfall and the San Joaquin River stage. Note that the period from May through September 2019 is excluded because dewatering of the South Pond began at that time to allow mining to progress into that area of the site, and substantially increased dewatering in a manner that does not reflect dewatering needs from the inflow of groundwater and surface water runoff into the Quarry Site. The dewatering rate from October 2018 to April 2019 ranged from 2.0 acre-feet per week to 15.1 acre-feet per week and averaged 7.3 acre-feet per week. As shown in Figure 4.10-13, the variation in dewatering rates correlates with local precipitation but does not appear to be affected substantially by changes in the flow within the adjacent San Joaquin River. This indicates that, while there is some hydraulic connectivity between the San Joaquin River and the Quarry Site, water from San Joaquin River is currently not a substantial source of the groundwater inflow into excavations within the Quarry Site.



SOURCE: EMKO 2023; arranged by Benchmark Resources in 2023.
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Groundwater Level Data for Offsite Wells Near the Quarry Site
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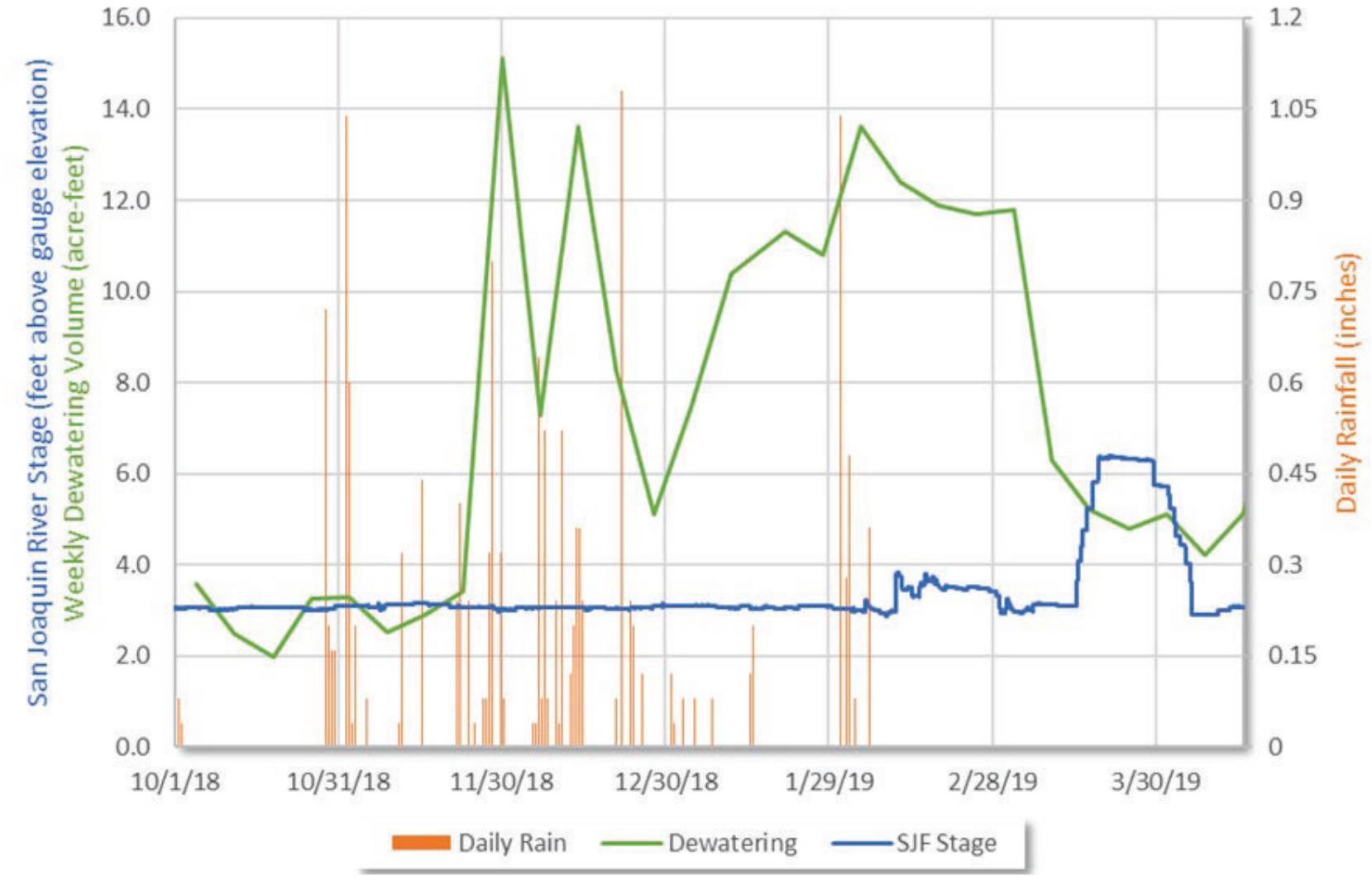

SOURCE: EMKO 2023; arranged by Benchmark Resources in 2023.
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Comparison of Weekly Dewatering Rates with Daily Rainfall and River Stage
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Table 4.10-7, "Comparison between Water Quality Data in San Joaquin River and Groundwater Quality at the Quarry Site," presents the water quality data from the San Joaquin River (shown in Table 4.10-4) and the groundwater data from the Quarry Site (shown in Table 4.10-6). The data shows little similarity between constituent concentrations in the San Joaquin River water and constituent concentrations in groundwater at the Quarry Site, even in well clusters MW-1, MW-2, and M-7, which are located nearest the river. This is especially apparent in the pH and total dissolved solids results, but also applies to most other parameters measured. Similar to the data on dewatering rates, this information implies that there is not any significant or consistent flow of water from the river to the groundwater at the Quarry Site.

Table 4.10-7
Comparison of San Joaquin River Water Quality to Quarry Site Groundwater Quality

Parameter	Units	San Joaquin River Sample	MW-1M	MW-1D	MW-2M	MW-2D	MW-7D
Calcium	**mg/L**	3	30.9	43.2	26.2	38.4	9.0
Magnesium	**mg/L**	ND	11.4	16.8	16.9	15.8	1.7
Sodium	**mg/L**	3	29	16	30	26	36
Potassium	**mg/L**	ND	3.49	9.26	7.93	7.10	6.08
Total Alkalinity	**mg/L**	30	146.0	157	91.3	133.0	51.7
Bicarbonate	**mg/L**	40	146.0	157	89.5	133.0	51.7
Carbonate	**mg/L**	ND	ND	ND	2.0	ND	ND
Hydroxide	**mg/L**	ND	ND	ND	ND	ND	ND
Sulfate	**mg/L**	0.9	7.3	10.4	28.0	23.3	24.1
Chloride	**mg/L**	2	7.3	26.8	11.8	17.6	16.2
Total Dissolved Solids	**mg/L**	20	223	250	313	333	125
Specific Conductance	**µmhos/cm**	39	382	401	482	492	211
pH	**Std Units**	8.2	7.4	7.3	8.3	7.3	8.0
Nitrate, as N	**mg/**	ND	0.8	0.4	24.1	16.4	ND
Arsenic (total)	**µg/L**	ND	--	--	--	--	--
Arsenic (dissolved)	**µg/L**	1	ND	ND	1.3	3.0	4.8
Copper (total)	**µg/L**	3	--	--	--	--	--
Copper (dissolved)	**µg/L**	ND	ND	ND	ND	ND	ND
Iron (total)	**µg/L**	250	--	--	--	--	--
Iron (dissolved)	**µg/L**	ND	ND	ND	ND	ND	170
Lead (total)	**µg/L**	0.3	--	--	--	--	--
Lead (dissolved)	**µg/L**	ND	ND	0.031	0.044	ND	0.028
Manganese (total)	**µg/L**	9.7	--	--	--	--	--

Parameter	Units	San Joaquin River Sample	MW-1M	MW-1D	MW-2M	MW-2D	MW-7D
Manganese (dissolved)	**µg/L**	0.7	0.028	60	30	ND	20
Mercury (total)	**µg/L**	ND	--	--	--	--	--
Mercury (dissolved)	**µg/L**	ND	ND	ND	ND	ND	0.054

Table Source: EMKO 2023.
Table Notes: µg/L = micrograms per liter; mg/L = milligrams per liter; µmhos/cm = micromhos per centimeter.
-- = parameter not analyzed for this sample.
ND = constituent concentration below detection limit.
This data has been compiled from Table 4.10-4 and Table 4.10-6.

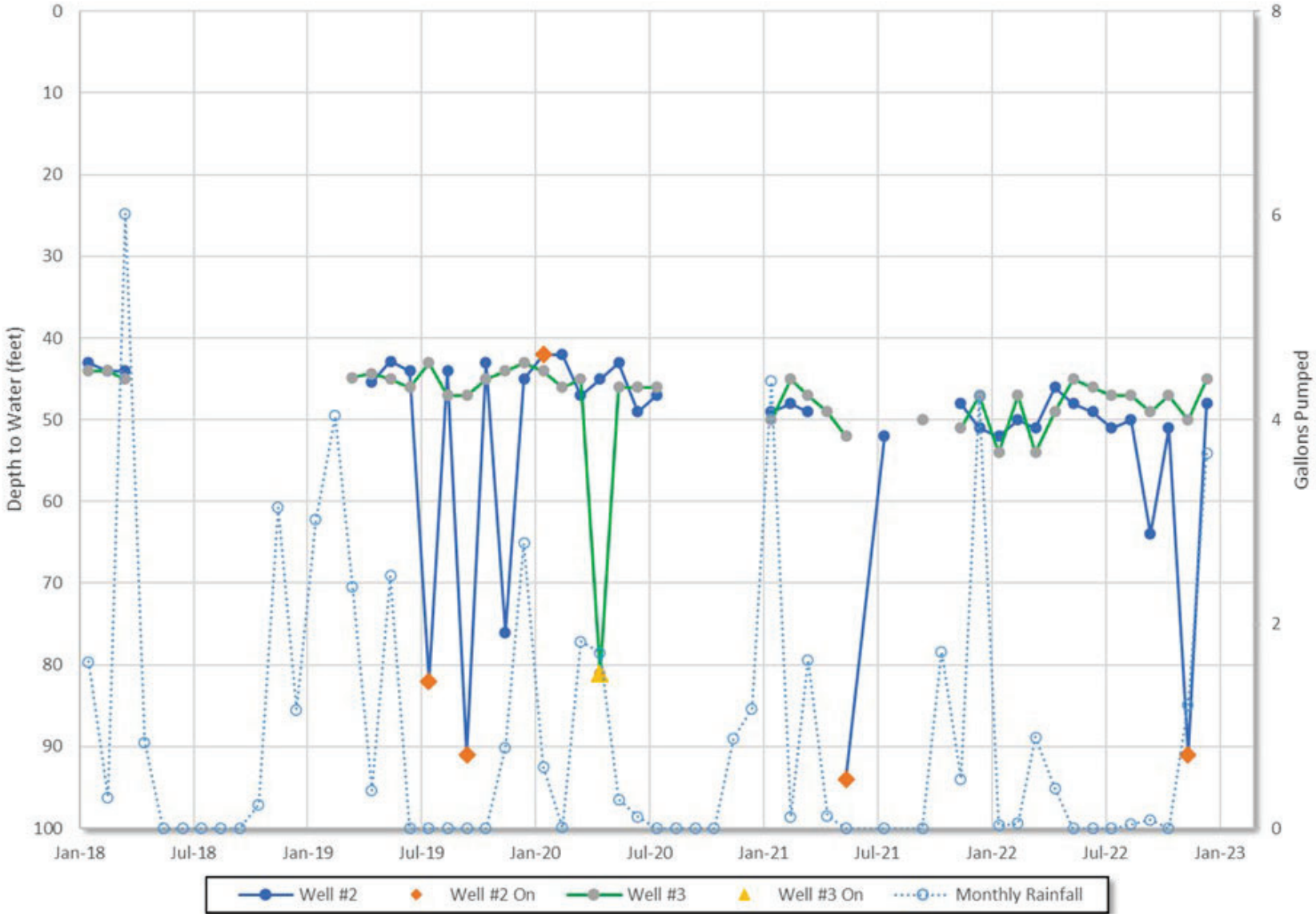
4.10.1.10 CSA 44C Wells and Quarry Site Interactions

The information in this discussion of the relationship between water levels and pumping at the County's CSA 44C wells and pumping at the Quarry Site is based on the Quarry Site Groundwater Conditions Report (Appendix G-4) and the *Hydrology and Water Quality Analysis Report* (Appendix G-5), unless otherwise noted. Based on a review of available data, the evaluations' conclusions are summarized as follows:

- Water level data at the County's CSA 44C wells is consistent with the description above for groundwater levels at the Quarry Site and its vicinity, which show long-term stability. No notable drought effects were observed.
- Water level declines of 30 to 40 feet in the County's CSA 44C wells have been measured during pumping.

The discussion below presents the information on which this understanding of the interactions of the County's CSA 44C wells and the Quarry Site is based.

EMKO (2023) presents well pumping and water level data from the County's CSA 44C wells from January 2018 to September 2021 from Fresno County to provide information regarding existing (baseline) conditions for those wells. Figure 4.10-14, "Comparison of CSA 44C Wells Groundwater Levels to Pumping Periods and Monthly Rainfall," presents depth to water measurements for wells CSA 44C No. 2 and No. 3, including both the static measurements and the readings that were taken while the pumps were operating. Monthly rainfall data is also shown. It is important to note that the data does not show every period during which the wells were pumped, the data only represents the times that one or both well pumps were operating at the time at which water levels were measured by County staff. In addition, the maximum drawdown in the wells would have occurred at the end of the pumping period. If the measurement occurred shortly after the pump began operating, the drawdown in the measured water level may be appreciably less than the maximum for the pumping period.



SOURCE: EMKO 2023; arranged by Benchmark Resources in 2023.
Notes: Image not printed to scale.

Comparison of CSA 44C Wells Groundwater Levels to Pumping Periods and Monthly Rainfall
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The pumps in both wells are at a depth of 105 feet bgs. Thus, pumping cannot cause the water levels in the wells to drop below that depth.

The data in Figure 4.10-14 show stable water levels during non-pumping periods with no discernable seasonal fluctuations in response to rainfall. Water levels drop markedly in both wells during pumping; however, the water levels show consistent recovery. The lack of notable drought effects is consistent with the recent groundwater level data from the Quarry Site monitoring wells (Figure 4.10-11) and the historic data from the windmill well and Beck Ranch well (Figure 4.10-12). As described above in Section 4.10.1.8, the Friant-Kern Canal and San Joaquin River are the most likely sources of groundwater recharge at the Quarry Site and its vicinity, which includes the nearby CSA 44C wells.

The pumping into the Northeast Pond from the Quarry Site is also a likely source of recharge for the County's CSA 44C wells.

4.10.2 Regulatory Setting

4.10.2.1 Federal

Federal Clean Water Act of 1972

The Federal Clean Water Act (CWA) of 1972 is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, wetlands, and coastal wetlands. It is administered by the U.S. Environmental Protection Agency (EPA). The Clean Water Act operates on the principle that all discharges into the nation's waters (referred to as waters of the U.S.) are unlawful unless specifically authorized by a permit. The EPA has delegated its authority to implement and enforce most of the applicable water quality provisions of this law to the individual states. In California, the provisions are enforced by nine RWQCBs under the auspices of the SWRCB. The project sites are located within the jurisdiction of the Central Valley RWQCB.

Section 303 of the Clean Water Act (Beneficial Use and Water Quality Objectives)

The Central Valley RWQCB is responsible for the protection of the beneficial uses of waters within the Central Valley Basin, including the project sites. The RWQCB uses its planning, permitting, and enforcement authority to implement plans, policies, and provisions for water quality management established in the Basin Plan.

In accordance with state policy for water quality control, the RWQCB employs a range of beneficial use definitions for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives and discharge conditions and prohibitions.

The Basin Plan for the Central Valley Basin has identified existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdiction.

Under CWA Section 303(d), the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives. Once a water body has been listed as impaired on the 303(d) list, a TMDL for the constituent of concern (pollutant) must be developed for that water body. The beneficial uses and TMDLs for the water bodies downstream of the project site are listed in Tables 4.10-1 and 4.10-2, above.

Section 402 of the Clean Water Act (National Pollutant Discharge Elimination System)

Under Section 402 of the Clean Water Act, the discharge of pollutants through a point source into waters of the United States is prohibited unless the discharge is in compliance with an NPDES permit. The NPDES program regulates the discharge of pollutants from municipal and industrial wastewater treatment plants and sewer collection systems, as well as stormwater discharges from industrial facilities, municipalities, and construction sites. In California, implementation and enforcement of the NPDES program is conducted through the SWRCB and the nine RWQCBs. The RWQCBs set standard conditions for each permittee in their region, which includes effluent limitations and monitoring programs.

4.10.2.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (codified in the California Water Code Section 13000 et seq.) is the primary water quality control law for California. This Act established enforcement and implementation measures for the SWRCB and the nine RWQCBs, which are charged with implementing this Act. Porter-Cologne establishes a comprehensive program for the protection of water quality and the beneficial uses of water. It applies to surface waters, wetlands, and groundwater, and to both point- and nonpoint-sources. Porter-Cologne also incorporates many provisions of the CWA, such as delegating the NPDES permitting program to the SWRCB and the RWQCBs. Whereas the federal CWA applies to all waters of the United States, the Porter-Cologne Act applies to waters of the state, which includes isolated wetlands and groundwater in addition to federal waters. In addition to other regulatory responsibilities, the RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the state could cause pollution or nuisance, including impacts to public health and the environment.

In addition to implementing the NPDES permitting program, the Porter-Cologne Act authorizes the RWQCBs to issue Waste Discharge Requirements (WDRs). Generally, WDRs are issued for discharges that are exempt from the federal CWA NPDES permitting program, discharges that may affect groundwater quality, and/or wastes that may be discharged in a diffused manner. WDRs are established and implemented to achieve the water quality objectives for receiving waters as established in the Basin Plans. The WDR process begins when an applicant submits a Report of Waste Discharge to the local RWQCB. The RWQCB staff can then issue WDRs and monitoring requirements.

WDRs Order No. 90-083

WDRs Order 90-083 currently regulates the discharge of 1.5 million gallons per day of wash water generated by the washing/processing of sand and gravel at the Plant Site. The wash water is discharged to silt ponds (sometimes also referred to as "settling basins" and "settling ponds") onsite. The WDRs prohibit the discharge of waste other than wash water to the silt ponds. Silt ponds are required to maintain a pH greater than 6.5 and less than 9.0 and must be maintained to prevent inundation or washout due to storms up to the 100-year storm. Freeboard must be at least two feet, and the ponds must have sufficient capacity to accommodate both wash water flows and stormwater runoff for storms up to the 100-year storm. The silt ponds must not contain chemicals, heavy metals, trace elements, or radionuclides that may adversely affect the beneficial uses of groundwater. Monthly estimates of flow and freeboard must be monitored and recorded, and quarterly grab samples from the ponds must be analyzed for pH. Annual monitoring reports must be submitted to the local RWQCB.

NPDES Industrial General Permit

The Statewide General Permit for Storm Water Discharges Associated with Industrial Activities, Order 2014-0057-DWQ, NPDES No. CAS000001 (Industrial General Permit) regulates industrial stormwater discharges and authorized non-storm water discharges from industrial facilities in California. Industrial facilities such as manufacturers, landfills, mines, steam generating electricity, hazardous waste facilities, transportation with vehicle maintenance, larger sewage and wastewater plants, recycling facilities, and oil and gas facilities are typically required to obtain Industrial General Permit coverage. Facilities subject to the Industrial General permit must comply with the provisions of the Industrial General Permit by eliminating unauthorized non-stormwater discharges, developing and implementing an Industrial Stormwater Pollution Prevention Plan (SWPPP), and monitoring storm water discharges and authorized non-storm water discharges in accordance with a Monitoring Implementation Plan. The purpose of the Industrial SWPPP is to:

- Demonstrate compliance with the Industrial General Permit;
- Identify pollutant sources potentially affecting the quality of storm water discharges;
- Develop Best Management Practices (BMPs) to reduce or prevent storm water pollutants associated with industrial activities;
- Measure the effectiveness of BMPs in preventing or reducing pollutants in storm water discharges and authorized non-storm water discharges;
- Outline the Monitoring Implementation Plan;
- Provide measurable goals for the implementation of the SWPPP; and
- Ensure that practices at the facility to reduce or prevent pollutants in storm water discharges and authorized non-stormwater discharges are evaluated and revised to meet changing facility conditions.

Rockfield Quarry is subject to the Industrial General Permit through the following Standard Industrial Classification (SIC) codes: 1422 – Construction Sand and Gravel and 3273—Ready-Mixed Concrete. The Applicant has prepared and filed with the State Water Resources Control Board (SWRCB) an Industrial SWPPP for the facility, and periodically updates the SWPPP, most recently in 2017 (CEMEX 2017). The SWPPP is implemented in conjunction with a hazardous materials business plan (HMBP) and Spill Prevention Control and Countermeasure (SPCC) Plan. The SWPPP notes that both the Plant Site and Quarry Site are surrounded by berms/levees that separate onsite drainage from offsite drainage. Stormwater structural controls are used in various areas of the sites to divert, infiltrate, reuse or otherwise manage stormwater runoff to reduce the discharge of pollutants. Where possible, structural controls are installed and maintained to segregate stormwater runoff from process water drainage areas. Segregation of stormwater runoff and process water areas is helpful in minimizing the amount of stormwater that must be managed. Visual inspections are conducted on a monthly basis. Both the Plant Site and the Quarry Site are part of the Building Materials Industry Group; therefore, sampling occurs up to two times per year at two designated locations for qualified storm events on the Plant Site and one designated location on the Quarry Site.

The SWPPP identifies potential pollutant sources on the sites and specifies BMPs to prevent potential pollutant sources to stormwater discharges. Total suspended solids, pH greater than 10, iron, oil, grease, and fuels are the pollutant sources identified. These pollutant sources primarily occur on the Plant Site because currently no activities outside of mining excavation occur on the Quarry Site. BMPs include, but are not limited to, good housekeeping measures; maintaining spill response materials in oil storage areas, fueling station, and at the office; conducting regular inspections, testing, maintenance and repair of equipment and operational systems to uncover conditions such as cracks or slow leaks

that could cause breakdowns or failures that result in stormwater pollution; inspect areas where soil erosion occurs on the outer perimeter of berms and levees to ensure it does not affect the site's perimeter stormwater containment; employee training; use of shrouds, curtains, and/or water spray during loading of dry ingredients into concrete delivery trucks to minimize dust generation; apply dust suppressants during dry weather; and conduct all vehicle and equipment rinsing and washing operations on a designated paved surface within a contained area that drains to the process water containment and recycling system.

NPDES Construction General Permit

Construction projects disturbing more than one acre of land during construction may be required to comply with the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, Order No. WQ 2022-0057-DWQ, NPDES No. CAS000002 (Construction General Permit).

To obtain coverage under the Construction General Permit, the discharger must provide via electronic submittal, a Notice of Intent, a SWPPP, and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation. The Construction General Permit also covers linear underground and overhead projects, such as pipeline installations. Construction General Permit activities are regulated at a local level by the RWQCB.

The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the project risk level (i.e., Level 1, Level 2, or Level 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water. The determination of the project risk level would be made by the project applicant when the Notice of Intent is filed (and when more details become known when the construction activity begins).

The performance standard in the Construction General Permit is that dischargers shall minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and BMPs that achieve Best Available Technology for treatment of toxic and non-conventional pollutants and Best Conventional Technology for treatment of conventional pollutants. A SWPPP must be prepared by a Qualified SWPPP Developer that meets the certification requirements in the Construction General Permit. Operation of BMPs must be overseen by a Qualified

SWPPP Practitioner that meets the requirements outlined in the Construction General Permit.

The SWPPP must also include a construction site monitoring program. Depending on the project risk level, the monitoring program may include visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment).

California Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act of 1975 (SMARA) (Public Resources Code [PRC], Sections 2710–2796) and its implementing regulations (California Code of Regulations [CCR], Title 14, Section 3500 et seq.) provide a comprehensive surface mining and reclamation policy with the regulation of surface mining operations to assure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. SMARA also encourages the production, conservation, and protection of the state's mineral resources. PRC Section 2207 provides annual reporting requirements for all mines in the state, under which the State Mining and Geology Board is also granted authority and obligations to ensure reclamation of mined lands.

SMARA 14 CCR Section 3706 applies to the discussion of the project's potential for hydrology and water quality impacts:

a) Surface mining and reclamation activities shall be conducted to protect on-site and downstream beneficial uses of water in accordance with the Porter-Cologne Water Quality Control Act, Water Code Section 13000, et seq., and the Federal CWA, 33 U.S.C. Section 1251, et seq.
b) The quality of water, recharge potential, and storage capacity of ground water aquifers which are the source of water for domestic, agricultural, or other uses dependent on the water, shall not be diminished, except as allowed in the approved reclamation plan.
c) Erosion and sedimentation shall be controlled during all phases of construction, operation, reclamation, and closure of a surface mining operation to minimize siltation of lakes and watercourses, as required by the RWQCB or the SWRCB.
d) Surface runoff and drainage from surface mining activities shall be controlled by berms, silt fences, silt ponds, revegetation, hay bales, or other erosion control measures, to ensure that surrounding land and water resources are protected from erosion, gullying, sedimentation, and contamination. Erosion control methods

shall be designed to handle runoff from not less than the 20 year/l-hour intensity storm event.

e) Where natural drainages are covered, restricted, rerouted, or otherwise impacted by surface mining activities, mitigating alternatives shall be proposed and specifically approved in the reclamation plan to assure that runoff shall not cause increased erosion or sedimentation.

f) When stream diversions are required, they shall be constructed in accordance with: (1) the stream and lake alteration agreement between the operator and the Department of Fish and Game; and (2) the requirements of the Federal CWA, Sections 301 (33 U.S.C. 1311) and Section 404 (33 U.S.C. 1344) and/or Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

g) When no longer needed to achieve the purpose for which they were authorized, all temporary stream channel diversions shall be removed, and the affected land reclaimed.

Sustainable Groundwater Management Act

SGMA is a package of three bills (Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319, which each were filed with the Secretary of State on September 16, 2014) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. On May 16, 2016, the SWRCB adopted a resolution to adopt an emergency regulation to implement SGMA. The Office of Administrative Law approved the final regulation on June 29, 2017. SGMA establishes standards for sustainable groundwater management, roles and responsibilities for local agencies that manage groundwater resources, and priorities and timelines to achieve sustainable groundwater management within 20 years of implementing a Groundwater Sustainability Plan (GSP) for high- and medium-priority groundwater basins. Central to the SGMA are the identification of critically over-drafted basins; the prioritization of groundwater basins as either low-, medium-, or high-priority basins; establishment of Groundwater Sustainability Agencies; and preparation and implementation of GSPs for medium- and high-priority and critically over drafted basins. GSPs are detailed road maps for how groundwater basins will reach long term sustainability. GSPs must consider all beneficial uses and users of groundwater in the basin, as well as include measurable objectives and interim milestones that ensure basin sustainability within 20 years of implementing the GSP. A basin may be managed by a single GSP or multiple coordinated GSPs.

At the state level, DWR has the primary role in the implementation, administration, and oversight of SGMA, with the SWRCB stepping in should a local agency be found to not be managing groundwater in a sustainable manner.

As discussed in Section 4.10.1.6, above, the proposed project is within the Kings Subbasin, which is designated a critically over drafted, high priority groundwater basin under SGMA. The Kings Subbasin has seven Groundwater Sustainability Agencies responsible for meeting the SGMA requirement that medium- and high- priority basins halt groundwater overdraft and bring groundwater basins into balanced levels of pumping and recharge. The Groundwater Sustainability Agencies entered into a cooperative Memorandum of Understanding for development of the Groundwater Sustainability Plans and grant funding, which was approved by DWR in August 2023. The Groundwater Sustainability Agencies also developed a Coordination Agreement in accordance with Section 357.4 of the SGMA Regulations. The formalized coordination agreement will help ensure that: (a) the GSPs have been developed utilizing similar data and methodologies and (b) there is consistent interpretation of the Kings Basin setting (North Kings GSA 2022).

The North Kings GSA is a joint powers authority consisting of the following public agencies: County of Fresno, Fresno Irrigation District, City of Fresno, City of Clovis, City of Kerman, Biola Community Services District, Garfield Water District, and International Water District. The North Kings GSA adopted a Groundwater Sustainability Plan in 2019 (North Kings GSA 2022). Every five years as part of SGMA, GSAs must do what is called a periodic evaluation and submit a revised GSP to DWR. Although the North Kings GSA received approval from DWR on its current GSP, this approval was conditional provided the GSAs implement twelve corrective actions provided by DWR in preparation for the 2025 GSP update.

Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy)

On June 19, 2012, the SWRCB adopted the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy) (Resolution No. 2012-0032). The OWTS Policy authorizes a qualified local agency to implement the Local Area Management Program that serves as the standard by which authorized local agencies regulate on-site wastewater treatment systems. The Local Area Management Program must be approved by the appropriate regional board.

Salt and Nitrate Control Program

The Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative developed a comprehensive Salt and Nitrate Management Plan (SNMP) for the Central Valley Region (RWQCB 2020). The SNMP is based on the components of the Salt and Nitrate Control Program Basin Plan Amendment that was adopted by the Central Valley RWQCB on May 31, 2018 (RWQCB 2019).

The SNMP documented elevated salt and nitrate concentrations in portions of the Central Valley that impair or threaten to impair the region's water and soil quality which, in turn, adversely affects agricultural productivity and/or drinking water supplies. Excessive nitrates are significant issues for public health and safety in some areas.

Based on the findings, the Central Valley SNMP is designed to address both legacy and ongoing salt and nitrate accumulation issues in surface and groundwater; however, the primary focus of early actions (first ten years, e.g., by 2028) is on groundwater quality and in particular nitrate impacts to drinking water supplies. The over-arching management goals and priorities are:

1) Ensure Safe Drinking Water Supply (short and long term);
2) Achieve Balanced Salt and Nitrate Loading; and
3) Implement Long-Term, Managed Restoration of Impaired Water Bodies to restore groundwater quality.

The Salt and Nitrate Control Program is divided into two separate programs: (1) a Salt Control Program that is intended to control salt discharges to surface and groundwater and (2) a Nitrate Control Program that is intended to control discharges of nitrate to groundwater. The Rockfield Quarry is not a substantial source of nitrates (which are primarily used by agricultural operations in the Central Valley), and therefore is not subject to the Nitrate Control Program.

However, the RWQCB sent letters notifying existing NPDES and WDRs permittees, including the Rockfield Quarry Operator, that they are required to participate in the Salt Control Program. The letter requires a permit holder to submit a Notice of Intent to comply with the Salt Control Program through one of two options:

1) **Option 1:** Conservative Option for Salt Permitting wherein the permittee conducts a site-specific analysis and monitoring to determine potential sources of salt and nitrates and implements site-specific controls.
2) **Option 2:** Alternative Option for Salt Permitting wherein the permittee elects to fund the local "prioritization and optimization" (P&O) study. The P&O study will evaluate existing conditions, policies, and engineering alternatives to identify salt management projects and actions to achieve salt sustainability in the Central Valley. Examples of the types of actions that could be recommended include capturing and treating surface discharges and identifying areas for groundwater recharge that could bring freshwater into areas of groundwater with high salts content.

The Rockfield Quarry Operator has chosen to fund the local P&O study (CV-SALTS Salinity Control Program 2023).

4.10.2.3 Local

Fresno County Ordinance Code

Chapter 14.04, "Well Regulations—General Provisions," and Chapter 14.08, "Well Construction, Pump Installation and Well Destruction Standards," of the Fresno County Ordinance Code address the permitting and construction of groundwater wells. These ordinances require that the construction, operation, and destruction of groundwater wells only be conducted under applicable permits. Permits for new wells are obtained through the Fresno County Environmental Health Department.

Chapter 15.48, "Flood Hazard Areas," of the Fresno County Ordinance Code outlines requirements for projects within a floodplain and floodway. The 100-year floodplain is the area along a watercourse subject to inundation by the 100-year flow. The regulatory floodway is the area within the floodplain that must be reserved in order to convey the 100-year flow without cumulatively increasing the 100-year water surface elevation by more than a foot. The floodway on the Flood Insurance Rate Maps (FIRMs) constitutes an adopted regulatory floodway.

Section 15.48.080(F)(2) of the Fresno County Code states that:

> *Within an adopted regulatory floodway, the County shall prohibit encroachments, including fill, new construction, substantial improvements, and other development, unless certification by a Registered Civil Engineer is provided demonstrating the proposed encroachment shall not result in any increase in flood levels during the occurrence of the base discharge [100-year discharge].*

Section 15.48.050(CC) of the Fresno County Code defines the "floodway fringe" as "that area of the floodplain on either side of the `regulatory floodway' where encroachment may be permitted," i.e., the floodway fringe is the area within the 100-year floodplain, but outside the floodway. In essence, this regulation allows encroachments that block the floodway fringe as long as the floodway area is reserved to convey the 100-year flows. Since, by definition, the floodway water surface elevations can be up to a foot higher than the floodplain elevations, the regulations permit projects to cause up to one foot in rise in the 100-year water surface elevations.

Fresno County Zoning Ordinance—Land Use and Planning

The Zoning Ordinance of Fresno County—Land Use and Planning, last amended June 2018, has policies and ordinances related to hydrology and water quality as regards mine

sites. Specifically, Section 858, "Regulations for Surface Mining and Reclamation in All Districts," contains the following countywide development standards:

Section 858—Regulations for Surface Mining and Reclamation in All Districts

H. Mining and Reclamation Standards

13. Grading and revegetation shall be designed to minimize erosion and to convey surface runoff to natural drainage courses or interior basins designed for water storage. Basins that will store water during periods of surface runoff shall be designed to prevent erosion of spillways when these basins have outlet to lower ground.
14. Stockpiles of overburden and minerals shall be managed to minimize water and wind erosion.
15. Erosion control facilities such as settling basins, ditches, stream bank stabilization, and dikes shall be constructed and maintained where necessary to control erosion.
16. Extraction operations adjacent to any flowing stream shall be separated from the stream by closed dikes. No extractions within the stream will be permitted.
17. All water utilized in the plant operation shall be disposed of behind a closed dike so that it will not cause impairment of water in any stream.
18. Operations shall be conducted to substantially prevent siltation of groundwater recharge areas.
19. Settling ponds or basins shall be constructed to prevent potential sedimentation of streams at operations where they will provide a significant benefit to water quality.
25. The Department shall consider the potentially adverse environmental effects of surface mining operations and will generally require that:
    a. Disturbances of vegetation and overburden in advance of mining activities be minimized.
    b. Sufficient topsoil be saved to perform site reclamation in accordance with the Mining and Reclamation Plan.
    c. All reasonable and practical measures be taken to protect the habitat of fish and wildlife.
    d. Temporary or watershed diversion be restored.
    e. Permanent piles or dumps of mine waste rock and overburden be stabilized and not restrict the natural drainage without suitable provisions for diversion and toxic materials be removed or confined to control leaching.

26. Reclamation of mined lands shall be implemented in conformance with applicable performance standards as set forth in the State Regulations Sections 3703 et seq. pertaining to the subjects listed below:
    a. Wildlife habitat.
    b. Backfilling, regrading, slope stability, and recontouring.
    c. Revegetation.
    d. Drainage, diversion structures, waterways, and erosion control.
    g. Stream protection including surface and groundwater.
    h. Topsoil salvage, maintenance, and redistribution.
    i. Tailing and mine waste management

Surface mining operators are required to forward an annual surface mining report to the Department of Conservation (DOC) and to the County Department of Public Works and Development Services. The County is required to conduct or cause an annual inspection of the surface mining operation within six months of receipt of the operator's annual report to determine whether the surface mining operation is in compliance with the approved conditional use permit, approved mining and reclamation plan, approved financial assurances, and state regulations pertaining to mining. The County must submit the completed inspection form to the DOC within 30 days along with statements on compliance with SMARA, any inconsistencies with SMARA, and any pending action on the mine and reclamation plan, amendments, or financial assurances.

Fresno County General Plan

The *Fresno County General Plan* (Fresno County February 2024) Public Facilities and Services Element and Open Space and Conservation Element include the following policies that apply to the proposed project:

Public Facilities and Services Element

Section C. Water Supply and Delivery

Goal PF-C: To ensure the availability of an adequate and safe water supply for domestic and agricultural consumption.

Policy PF-C.3: To reduce demand on the county's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.

Policy PF-C.4: The County shall support efforts to expand groundwater and/or surface water storage that benefits Fresno County.

Policy PF-C.11: The County shall approve new development only if an adequate sustainable water supply to serve such development is demonstrated.

Policy PF-C.15: If the cumulative effects of more intensive land use proposals are detrimental to the water supplies of surrounding areas, the County shall require approval of the project to be dependent upon adequate mitigation. The County shall require that costs of mitigating such adverse impacts to water supplies be borne proportionately by all parties to the proposal.

Policy PF-C.16: The County shall, prior to consideration of any discretionary project related to land use, undertake a water supply evaluation. The evaluation shall include the following:

a. A determination that the water supply is adequate to meet the highest demand that could be permitted on the lands in question. If surface water is proposed, it must come from a reliable source and the supply must be made "firm" by water banking or other suitable arrangement. If groundwater is proposed, a hydrogeologic investigation may be required to confirm the availability of water in amounts necessary to meet project demand. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required.
b. If use of groundwater is proposed, a hydrogeologic investigation may be required. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required. Should the investigation determine that significant pumping-related physical impacts will extend beyond the boundary of the property in question, those impacts shall be mitigated.
c. A determination that the proposed water supply is sustainable or that there is an acceptable plan to achieve sustainability. The plan must be structured such that it is economically, environmentally, and technically feasible. In addition, its implementation must occur prior to long-term and/or irreversible physical impacts, or significant economic hardship, to surrounding water users.

Policy PF-C.17: In the case of lands entitled to surface water, the County shall approve only land use-related projects that provide for or participate in effective utilization of the surface water entitlement such as:

a. Constructing facilities for the treatment and delivery of surface water to lands in question;

b. Developing facilities for groundwater recharge of the surface water entitlement;
c. Participating in the activities of a public agency charged with the responsibility for recharge of available water supplies for the beneficial use of the subject lands.

Policy PF-C.23: The County shall require that all new development within the County use water conservation technologies, methods, and practices as established by the County.

Policy PF-C.24: The County shall encourage the use of reclaimed water where economically, environmentally, and technically feasible.

Policy PF-C.28: The County shall generally not approve land use-related projects that incorporate a man-made lake or pond that will be sustained by the use of groundwater.

Goal PF-D: To ensure adequate wastewater collection and treatment and the safe disposal of wastewater.

Policy PF-D.6: The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that permit installation of such disposal facilities without threatening surface or groundwater quality or posing any other health hazards and where community sewer service is not available and cannot be provided.

Goal PF-E: To provide efficient, cost-effective, and environmentally-sound storm drainage and flood control facilities that protect both life and property and to divert and retain stormwater runoff for groundwater replenishment.

Policy PF-E.5: The County shall only approve land use-related projects that will not render inoperative any existing canal, encroach upon natural channels, and/or restrict natural channels in such a way as to increase potential flooding damage.

Policy PF-E.6: The County shall require that drainage facilities be installed concurrently with and as a condition of development activity to ensure the protection of the new improvements as well as existing development that might exist within the watershed.

Policy PF-E.7: The County shall require new development to pay its fair share of the costs of Fresno County storm drainage and flood control improvements within unincorporated areas.

Policy PF-E.9: The County shall require new development to provide protection from the 100-year flood as a minimum.

Policy PF-E.11: The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.

Policy PF-E.13: The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural drainage features.

Policy PF-E.14: The County shall encourage the use of retention-recharge basins for the conservation of water and the recharging of the groundwater supply.

Policy PF-E.15: The County should require that retention-recharge basins be suitably landscaped to complement adjacent areas and should, wherever possible, be made available to the community to augment open space and recreation needs.

Policy PF-E.20: The County shall require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in flood waters, flowing rivers, streams, creeks, or reservoir waters.

Policy PF-E.21: The County shall require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities, and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.

Open Space and Conservation Element

Section A. Water Resources

Goal OS-A: To protect and enhance the water quality and quantity in Fresno County's streams, creeks, and groundwater basins.

Groundwater Recharge

Policy OS-A.3: The County shall support efforts to create additional water storage that benefits Fresno County, and is economically, environmentally, and technically feasible.

Policy OS-A.5: The County shall encourage, where economically, environmentally, and technically feasible, efforts aimed at directly or indirectly recharging the county's groundwater.

Land Use

Policy OS-A.13: The County shall require that natural watercourses are integrated into new development in such a way that they are accessible to the public and provide a positive visual element and a buffer area between waterways and urban development in an effort to protect water quality and riparian areas.

Policy OS-A.14: The County shall require the protection of floodplain lands and, where appropriate, acquire public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access, and recreation.

Policy OS-A.20: The County shall support the policies of the San Joaquin River Parkway Master Plan to protect the San Joaquin River as an aquatic habitat, recreational amenity, aesthetic resource, and water source.

Water Quality

Policy OS-A.18: The County shall protect groundwater resources from contamination and overdraft by pursuing the following efforts:

a. Identifying and controlling sources of potential contamination;
b. Protecting important groundwater recharge areas;
c. Encouraging water conservation efforts and supporting the use of surface water for urban and agricultural uses wherever feasible;
d. Encouraging the use of treated wastewater for groundwater recharge and other purposes (e.g., irrigation, landscaping, commercial, and non-domestic uses);
e. Supporting consumptive use where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area;
f. Considering areas where recharge potential is determined to be high for designation as open space; and
g. Developing conjunctive use of surface and groundwater.

Policy OS-A.19: The County shall require new development near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in storm waters, flowing river, stream, creek, or reservoir waters.

Policy OS-A.20: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.

Policy OS-A.21: The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff.

Policy OS-A.24: In areas with increased potential for groundwater degradation (e.g., areas with prime percolation capabilities, coarse soils, and/or shallow groundwater), the County shall only approve land uses with low risk of degrading groundwater.

Health and Safety Element

Section C. Flood Hazards

Goal HS-C: To minimize the risk of loss of life, injury, and damage resulting from flood hazards.

Policy HS-C.6: The County shall encourage, as applicable, expansion of stormwater and flood protection infrastructure capacity in order to accommodate changes in precipitation and extreme weather events including the establishment or expansion of recharge basins.

Policy HS-C.12: The County shall encourage the performance of appropriate investigations to determine the 100-year water surface elevations for the San Joaquin River, taking into account recent storm events and existing channel conditions, to identify the potential extent and risk of flooding. New development, including public infrastructure projects, shall not be allowed along the river until the risk of flooding at the site has been determined and appropriate flood risk reduction measures identified.

Policy HS-C.13: Where existing development is located in a flood hazard area, the County shall require that construction of flood control facilities proceed only after a complete review of the environmental effects and a project cost/benefit analysis.

Policy HS-C.14: The County shall promote flood control measures that maintain natural conditions within the 200-year floodplain of rivers and streams and, to the extent possible combine flood control, recreation, water quality, and open space functions. Existing irrigation canals shall be used

to the extent possible to remove excess stormwater. Retention-recharge basins should be located to be utilize natural drainage patterns.

Policy HS-C.16: The County shall continue to implement and enforce its Floodplain Management Ordinance. During the building permit review process, the County shall ensure project compliance with applicable Federal Emergency Management Agency (FEMA) standards pertaining to residential and non-residential development in the floodplain, floodway, or floodway fringe.

Policy HS-C.18: The County shall encourage open space uses in all flood hazard areas. Land Conservation contracts and open space and scenic easements should be made available to property owners.

Policy HS-C.19: The County shall consider dam failure inundation maps of all reservoirs in making land use and related decisions.

Fresno County Local Area Management Program

The Fresno County Public Works and Planning Department is the regulatory agency that oversees and issues permits for the design, installation, and operation of on-site wastewater treatment systems. An on-site wastewater treatment system may consist of tanks, treatment and dispersal components, and dispersal fields which are used to convey, treat, store, or dispose of potentially harmful wastewater when those wastewaters are not directly and immediately disposed of in a public sanitary sewer. The authority for the Fresno County Public Works and Planning Department to develop and adopt ordinances, regulations, and orders pertaining to environmental health and sanitation and the design and permitting of OWTS is established in the California Health and Safety Code, Section 101000 et seq. and Fresno County Code Chapter 8.24 and Chapter 15.04.010 and 15.04.020.

The Fresno County Local Area Management Program (Fresno LAMP) was developed in accordance with the OWTS Policy and approved by the Central Valley RWQCB on April 6, 2017 (Resolution R5-2017-0033). The Fresno LAMP is codified in Chapter 15.20, "Plumbing Code," of the Fresno County Ordinance Code, and describes the requirements for siting, design, and construction of on-site wastewater treatment systems in the County (Fresno County 2019).

The Onsite Wastewater Treatment System Guidance Manual (OWTS Manual) provides the procedural and technical details for implementation of the provisions of the Fresno LAMP. The provisions within the OTWS Manual are designed to protect public health, groundwater and surface water bodies from degradation and provide

safely operating on-site wastewater treatment systems through proper design, siting, installation, maintenance and monitoring (Fresno County 2018b).

4.10.3 Significance Criteria and Analysis Methodology

4.10.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to hydrology and water quality if it would:

a) violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater water quality;
b) substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
c) substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - result in substantial erosion or siltation on- or off-site,
    - substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite,
    - create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or
    - impede or redirect flood flows;
d) in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
e) conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.10.3.2 Analysis Methodology

The evaluation of the hydrology and water quality impacts of the proposed project is based on information from published maps, site-specific studies, and other documents that describe the hydrological and hydrogeological conditions of the project area, including the findings of the Hydraulic Analysis (Appendix G-1), Surface Runoff and Drainage Plan (Appendix G-2), Groundwater Conditions at the Plant Site (Appendix G-3), Groundwater Conditions at the Quarry Site (Appendix G-4), and Hydrology and Water Quality Analysis Report (Appendix G-5) completed for the proposed project.

The analysis assumes that the operator of the Rockfield Quarry (Operator) would comply with the requirements of the California Surface Mining and Reclamation Act, Fresno County Ordinance Code, and NPDES requirements. Potential project impacts were determined by comparing changes in hydrology and water quality relative to existing conditions on the project sites.

The purpose and approach of the site-specific studies completed for the proposed project are described in the subsections below.

Hydraulic Analysis

The Hydraulic Analysis (Appendix G-1) estimates the existing and proposed floodplain and regulatory floodway conditions along the Plant Site and Quarry Site. A 100-year HEC-RAS analysis (using current software version 5.0.7) was prepared along the Quarry Site. This study reach covers the majority of the Quarry Site and was used to define the current floodplain and identify potential impacts related to hydrologic and water quality conditions as a result of the proposed project. With regard to the Plant Site, the study includes an engineering assessment of the existing San Joaquin River and Little Dry Creek floodplains and identifies potential impacts related to hydrologic and water quality conditions as a result of the proposed project. Detailed methodology is provided in Appendix G-1.

Surface Runoff and Drainage Plan

The Surface Runoff and Drainage Plan (Appendix G-2) identifies conceptual stormwater conveyance requirements within the proposed project's overall mining/reclamation area boundary. Specifically, this plan presents the regulatory requirements for conveyance and storage, the overall conceptual approach for managing storm drainage within the Plant Site and Quarry Site, a summary of the calculations used to estimate runoff volume from the design storm event, and the stormwater routing approach.

The Surface Runoff and Drainage Plan indicates that BMPs for stormwater treatment and erosion protection as well as stormwater monitoring requirements will be provided in the separate Industrial SWPPP that will be developed and implemented for the proposed project.

The overall approach for managing the stormwater runoff for the proposed project is summarized as follows:

- Off-site runoff will not commingle with active project area runoff from the Quarry Site or Plant Site.

- Stormwater runoff from the Plant Site will be captured and recycled within the site.
- Direct precipitation within active Quarry Site mining areas and on perimeter safety berms will be retained within the pit. The safety berms will provide additional isolation of mining area runoff from adjacent area runoff.
- Post-reclamation stormwater runoff will be captured by the open water ponds ultimately created in the Quarry Site and Plant Site (i.e., direct precipitation within the ponds and pond slopes).
- Mined slopes in hard rock will not be subject to erosion, so additional erosion control measures are not required. Mined slopes not in hard rock will be seeded or planted for erosion control.

Groundwater Conditions Reports

The Plant Site Groundwater Conditions Report (Appendix G-3) describes the existing subsurface geologic conditions at the Plant Site; identifies monitoring well locations and describes the water level elevations and fluctuations measured in these wells; characterizes the consumption of water by the existing processing and production operations that require groundwater pumping and river diversions; describes the groundwater aquifer characteristics; identifies the locations and characteristics of off-site groundwater supply wells; describes the sampling program implemented to establish baseline surface and groundwater quality; and provides water budgets for the Plant Site. Detailed methodology and findings are provided in Appendix G-3.

The Quarry Site Groundwater Conditions Report (Appendix G-4) describes the existing subsurface geologic conditions on the Quarry Site; identifies monitoring well locations and describes the water level elevations and fluctuations measured in these wells; identifies the locations and characteristics of off-site groundwater supply wells; describes the well production rates of onsite groundwater monitoring and supply wells; describes and presents the results of aquifer test results; describes the sampling program implemented to establish baseline surface and groundwater quality; and provides water budgets for the Quarry Site. Detailed methodology and findings are provided in Appendix G-4.

Hydrology and Water Quality Analysis Report

The Hydrology and Water Quality Analysis Report (Appendix G-5) utilizes the information in the groundwater conditions reports (Appendices G-3 and G-4) and the groundwater and surface water monitoring and sampling data collected for the project sites to draw conclusions on the existing groundwater hydrology conditions on the

project sites and to evaluate the potential impacts to groundwater hydrology under the proposed project. Detailed methodology and findings are provided in Appendix G-5.

Proposed Water Management

Based on the Surface Mining and Reclamation Plan (SMRP) (see Appendix B-1 of this Draft EIR) and Project Description/Operational Statement (see Appendix B-2 of this Draft EIR), the proposed water management activities at the Plant Site and Quarry Site are described below. The analysis of potential impacts related to hydrology and water quality is based on these operational assumptions.

Proposed Plant Site Water Management

The existing and proposed Plant Site water management conditions are depicted schematically in Figure 4.10-3. Similar to the existing condition, under the proposed project, water from the river would continue to be delivered to the Plant Site via a river water delivery ditch. Wash water would continue to be sent to silt ponds via wastewater conveyance ditches. Water from the silt ponds would continue to be recycled back to the plant as process water, with river water added as necessary. Water from the silt ponds would also continue to be pumped to water trucks and used for dust control. Also, similar to existing conditions, groundwater would continue to be pumped from the two onsite groundwater supply wells for the ready-mix concrete plant and domestic use. In addition to the continuation of existing site water management practices, dewatering at the Plant Site would be implemented during Phase 1 operations once mining reaches the depth of the groundwater surface within the alluvial aggregate. Water pumped from the excavation would be discharged to groundwater recharge trenches that would be developed along the perimeter of the Plant Site to minimize drawdown near the San Joaquin River and along the southeast side of the Plant Site to minimize drawdown near a number of offsite groundwater wells (shown in Figure 4.10-2). Some of the pumped water may also be used for dust control and wash water. The Plant Site Groundwater Conditions Report estimates that the rate of dewatering of the Plant Site would increase to a maximum of 1,610 acre-feet per year (approximately 1,000 gallons per minute [gpm]).

Upon completion of mining at the Plant Site at the end of Phase 1, operations at the Plant Site would cease, all equipment and septic systems would be removed, and the site reclaimed as 138.5 acres of open space, and riparian and open water wildlife habitat. Overburden and fines recovered from the aggregate processing would be used as fill to reclaim the bottom 20 feet of the quarry pit. The consumption of groundwater at the Plant Site would be 405 acre-feet more per year than under existing conditions (i.e., 440. acre-feet after reclamation minus 35 acre-feet existing).

An approximately 100.5-acre, 20-foot-deep pond would be formed above the reclaimed bottom from groundwater and rainfall. The groundwater recharge trenches would be filled with native soil and seeded with native grasses and forbs. The wash water conveyance ditch and silt ponds would be removed with mining. For the west stockpile area that would not be mined, the stockpiles would be removed, the area graded to drain to the reclaimed excavation to the east and then seeded with native grasses and forbs and planted with native plants. Following the completion of mining, the river water delivery ditch would remain in place to preserve existing habitat but would no longer function as a delivery ditch. Monitoring and groundwater production wells would be abandoned in accordance with all applicable local and state provisions.

Proposed Quarry Site Water Management

The existing and proposed Quarry Site water management conditions are depicted schematically in Figure 4.10-5. During mining, surface runoff from rainfall and groundwater would accumulate in the excavated pit on the Quarry Site. Dewatering from the quarry pit would be necessary throughout the mining period, as it is under existing conditions. The rate of dewatering would increase as the mining depth increases. The water would continue to be pumped to water trucks and used for dust control and would also be pumped to the proposed aggregate plant that would be developed on the Quarry Site at the start of Phase 1 operations for use as wash water. Similar to the Plant Site, wash water from the aggregate plant would be sent to silt ponds via wastewater conveyance ditches. Water from the silt ponds would be recycled back to the plant as process water.

To promote groundwater recharge, water pumped from the excavation would continue to be piped to the Northeast Pond and to both existing and proposed groundwater recharge trenches located along the western perimeter of the Quarry Site. At both the Northeast Pond and groundwater recharge trenches, the Quarry Site Groundwater Conditions Report estimates that approximately half of the water pumped from the excavation would flow back to the excavation while the other half would recharge the local water-bearing units.

At the start of Phase 1 operations, water from the existing groundwater supply well at the southeast corner of the Quarry Site would be used for domestic purposes (e.g., toilets and hand washing). Wastewater would be treated at two proposed septic systems. At the start of Phase 2 operations, the water supply well would also be used to provide water to the ready-mix concrete plant that would be brought to the Quarry Site from the Plant Site. This use would not generate wastewater.

Upon completion of mining at the Quarry Site at the end of Phase 2, operations would cease, all equipment related to mining and aggregate processing and septic systems would be removed, and the site reclaimed to approximately 352.4 acres of open space, and riparian and open water wildlife habitat. The consumption of groundwater at the Quarry Site would be 145 acre-feet more per year than under existing conditions (i.e., 270 acre-feet after reclamation minus 125 acre-feet existing). An approximately 108-acre, 100-foot-deep lake would be formed from groundwater and rainfall in the excavation bottom. Water would continue to be pumped from the quarry pit into the Northeast Pond and groundwater recharge trenches. Therefore, equipment related to water management, such as pumps, piping, monitoring wells, and related electrical infrastructure, would remain. Slopes above the hardrock benches would be seeded with native grasses and forbs.

4.10.4 Project Impacts and Mitigation Measures

Impact 4.10-1: Violate Surface Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality at the Plant Site or Quarry Site During Mining and Reclamation

As described in Section 4.10.1.5, above, the existing surface water quality at the Plant Site and Quarry Site generally meet water quality standards. Water quality in the Plant Site silt pond and three Quarry Site ponds exceeded the Basin Plan (RWQCB 2019) limit for conductivity at both project sites and for pH at the Quarry Site (shown in Tables 4.10-3 and 4.10-4). In addition, unfiltered total metals exceeded limits at the Plant Site silt pond (shown in Table 4.10-3). However, these limits are intended to regulate water that discharges to the San Joaquin River, and neither site discharges to the river, nor does the project propose to discharge water to the river. As described in detail under Impacts 4.10-9 and 4.10-10, the Surface Runoff and Drainage Plan (Appendix G-2) for the project sites indicates that stormwater runoff would continue to be contained within each project site by existing berms. Therefore, the proposed project would not impact surface water quality offsite. Under the proposed project, the Plant Site would continue to use San Joaquin River water through Phase 1 operations; the San Joaquin River water meets all water quality standards (as shown in Tables 4.10-4 and 4.10-5).

Under the proposed project, water pumped from the excavation would continue to be pumped to water trucks and used for dust control and would continue to be piped to the Northeast Pond. The conductivity value in the Northeast Pond (Ponded Water Feature 2 in Figure 4.10-4) is below the secondary MCL of 900 micromhos per centimeter (µmhos/cm), consistent with the use of this pond for groundwater recharge. At the Quarry Site, the pH values in the Northeast Pond (i.e., Ponded Water Feature 2) and Ponded Water Feature 3 exceeded the secondary MCL range for pH. The elevated pH

values are likely due to uptake of carbon dioxide and release of oxygen by aquatic plant growth in the ponds and therefore are not a result of mining activities. Because there would be no change in the management of the Northeast Pond, no change in the existing water quality in the Northeast Pond is anticipated.

Potential effects to surface water quality within both the Plant Site and Quarry Site could occur under the proposed project. Impacts could occur due to erosion and sedimentation caused by land disturbances; the release of uncontained materials associated with processing and production facilities and equipment storage areas; improper handling of hazardous materials, including diesel, gasoline, and asphaltic oil that would be stored on-site; improper handling and detonation of blasting agents that would be brought to the site by a qualified blasting contractor for each blasting event; improper discharge of wash water generated by washing/processing of sand and gravel; and leaking oils and grease from heavy equipment. Similar leaking of oils and grease effects could occur during site reclamation, which would involve land disturbance and the use of heavy equipment as part of reconstruction and revegetation of slopes and during the demolition and removal of structures on the sites, including the removal of processing and production facilities and septic systems, and the abandonment of monitoring and groundwater supply wells.

Mining, processing, production, and reclamation activities under the proposed SMRP would be subject to all applicable local, state, and federal water quality and hazardous materials management requirements including the Industrial General Permit and the associated site-specific SWPPP, site-specific WDRs regarding the handling of wash water generated by the washing/processing of sand and gravel at each site, Hazardous Materials Business Plan (HMBP), and Spill Prevention Control and Countermeasure (SPCC) Plan. The requirements of the existing SWPPP and WDRs Order 90-083 for the Rockfield Quarry are described in Section 4.10.2.2, above. Consistent with regulatory requirements, the Operator would update the existing SWPPP and WDRs to reflect the proposed changes at the Plant Site and Quarry Site. The applicant must periodically review and update the SWPPP to ensure it addresses site specific conditions, and this process would continue under the proposed SMRP. With regard to the WDRs, the Operator would be required to submit a Report of Waste Discharge to apply for updated WDRs. The Report of Waste Discharge must be submitted to the Central Valley RWQCB at least 140 days prior to any discharge of wastewater from the project pursuant to California Water Code Section 13264. The Report of Waste Discharge needs to include a technical report that describes the treatment process and characterizes the wastewater discharge.

As described in Section 4.9, "Hazards and Hazardous Materials," of this Draft EIR, HMBPs and SPCC plans are required under the "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program), which in Fresno County is implemented by the Fresno County Environmental Health Department, referred to as the Certified Unified Program Agency (CUPA). An HMBP must include a hazardous materials inventory, a site map identifying the location of hazardous materials storage, an emergency response and spill prevention plan, and a training program. An SPCC plan must describe the locations of all aboveground petroleum storage tanks and information on the type of oil in each container and its storage capacity; the appropriate procedures for the routine handling of products; the discharge or drainage controls in place, such as secondary containment; countermeasures for discharge discovery, response, and cleanup; and methods of disposal of recovered material in accordance with applicable legal requirements. The Operator would be required to update the existing HMBP and SPCC Plan for both the Plant Site and Quarry Site and in accordance with hazardous material regulations. Diesel, gasoline, and asphaltic oil would be stored in aboveground storage tanks with appropriate secondary containment. In addition, any other oil products or hazardous materials that are stored in containers of 55 gallons or greater would be stored with appropriate secondary containment. No hazardous waste would be disposed of on the project site. All waste would be transported to a permitted/approved waste disposal facility. In accordance with regulatory requirements, HMBPs must be reviewed and updated annually and SPCC Plans must be reviewed and updated every five years.

The use of explosives as part of blasting operations on the Quarry Site could result in the degradation of water quality if the blasting agents are not handled or detonated appropriately. The *Blasting Protocols* (see Appendix H-6 of this Draft EIR) required to be implemented by Mitigation Measure 4.10-1 of this Draft EIR, specify practices to prevent the contamination of groundwater and surface water as a result of blasting. The protocols prohibit the storage of explosives on site, require blasting designs and loading controls to be prepared by qualified blasting contractors to ensure complete detonation, specify appropriate loading practices such as cleaning loading equipment in areas where wastewater can be properly contained, require explosives to be selected that have appropriate water resistance for the site conditions present, and require the implementation of practices for the management of muck piles (the fragmented pieces of rock left after the blast) to prevent interaction with stormwater. These protocols would minimize the risk of substantial surface water and groundwater quality degradation by blasting agents used on the Quarry Site.

Reclamation activities would occur within two years of the completion of each phase of mining on each site. The mining plan phases are shown in Figures 2-8, "Proposed Quarry Site Mining Plan," and Figure 2-9, "Plant Site Final Reclaimed Conditions," in Chapter 2, "Project Description," of this Draft EIR. This means that most reclamation activities would be carried out while mining is occurring on the project sites. For example, at the completion of Phase 1 of mining on the Plant Site, reclamation of the Phase 1 slopes would be conducted at the same time as mining of the Quarry Site under Phase 2 would begin. Reclamation activities that would be conducted in conjunction with mining would also be subject to coverage under the Industrial General Permit and associated site-specific SWPPP.

After mining on each site is complete, the final phase quarry pit slopes would be recontoured and revegetated. The existing processing and production facilities and septic systems on each project site would be removed and all monitoring and groundwater wells would be abandoned. The disturbed areas outside of the quarry pits (including the processing plant facilities) would be contour graded, revegetated, and converted to open space land uses. During these activities, the Operator would be required to comply with the NPDES program either by incorporating coverage under the Industrial General Permit through an amendment to the site-specific industrial activities SWPPP or by filing a Notice of Intent and SWPPP for compliance under the Construction General Permit. Similar to the Industrial General Permit SWPPP, the Construction General Permit SWPPP would identify BMPs that protect stormwater runoff, prevent unauthorized discharges, and ensure the avoidance of substantial degradation of water quality during final reclamation. Typical BMPs that are incorporated into construction SWPPPs to protect water quality may include the following:

- Covering stockpiled soil at the end of each workday.
- Vegetating landscaped/vegetated swale areas as soon as feasible following grading activities.
- Placing perimeter straw wattles to prevent off-site transport of sediment.
- Using drop inlet protection (filters and sandbags or straw wattles), with sandbag check dams within paved areas.
- Regular watering of exposed soils to control dust during demolition and construction.
- Implementing specifications for demolition/construction waste handling and disposal.
- Using contained equipment wash-out and vehicle maintenance areas.

- Maintaining erosion and sedimentation control measures throughout the construction period.
- Training, including for subcontractors, on general project site housekeeping.

Compliance with the NPDES program and CUPA program would require the implementation of SWPPP, WDR, HMBP, and SPCC Plan requirements to prevent the contamination of surface waters on the Plant Site and Quarry Site due to mining, processing, production operations, and reclamation activities. The implementation of the *Blasting Protocols* (see Appendix H-6 of this Draft EIR) would minimize the risk of substantial surface water quality degradation by blasting agents used on the Quarry Site. Therefore, compliance with existing regulations, and implementation of the *Blasting Protocols*, would reduce the potential of mining and reclamation activities proposed under the SMRP to violate water quality standards or substantially degrade surface water quality to less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.10-1: *Blasting Protocols*

The operator of the Rockfield Quarry shall at all times implement the requirements of the "Blasting Protocols" developed October 27, 2020, and updated September 8, 2021, by Vibra-Tech Engineers, Inc. The Blasting Protocols shall be appended to the Mitigation Monitoring and Reporting Program and shall be incorporated into the conditions of approval for the project.

Level of Significance After Mitigation: Less than significant.

Impact 4.10-2: Violate Surface Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality at the Plant Site after the Completion of Mining and Reclamation

Water quality can be affected after the completion of mining and reclamation if the proposed long-term land use could result in the release of pollutants (e.g., landscaping fertilizers, pesticides and herbicides, and trash). Upon completion of mining and reclamation at the Plant Site, the site would be reclaimed to open space and open water wildlife habitat. No post-reclamation uses are proposed that would involve activities or facilities that would require the use of hazardous materials, generate trash, or that would otherwise have the potential to degrade surface water quality or violate surface water quality standards or waste discharge requirements. Stormwater runoff would continue to be contained within the Plant Site by existing berms. Therefore, the potential of the

post-reclamation use of the Plant Site to impact surface water quality on or offsite would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.10-3: Violate Surface Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality at the Quarry Site after the Completion of Mining and Reclamation

Water quality can be affected after the completion of mining and reclamation if the proposed long-term land use could result in the release of pollutants (e.g., landscaping fertilizers, pesticides and herbicides, and trash). Upon completion of mining at the Quarry Site, the site would be reclaimed to open space and open water wildlife habitat. The only post-reclamation uses proposed are the long-term maintenance of equipment that would be used to pump water from the Quarry Pit into recharge trenches and the Northeast Pond. These periodic maintenance activities would require minimal use of hazardous materials, and would generally not generate trash, or otherwise have the potential to degrade surface water quality or violate surface water quality standards or waste discharge requirements. Upon completion of reclamation, stormwater runoff would continue to be contained within the Quarry Site by existing berms. Therefore, the potential of the post-reclamation use of the Quarry Site to impact surface water quality on or offsite would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.10-4: Violate Groundwater Quality Standards or Otherwise Substantially Degrade Groundwater Quality at the Plant Site Due to Activities Conducted During Mining and Reclamation

During mining and reclamation operations, dewatering of groundwater at the Plant Site would be implemented during Phase 1 operations, after mining reaches the depth of the groundwater surface within the alluvial aggregate. Groundwater pumped from the excavation would primarily be discharged to groundwater recharge trenches along the western and southern perimeter of the Plant Site, and some of the pumped water may also be used for dust control and wash water. As described in the "Groundwater Quality at the Plant Site" subsection of Section 4.10.1.7, above, groundwater sampling of monitoring wells at the Plant Site indicates that all constituents were generally within

water quality standards except for iron, manganese, and conductivity. Iron and manganese concentrations showed high variability and exceeded their respective Basin Plan standards and secondary MCL standards in some of the samples collected. Note that the Basin Plan standards for iron and manganese are the same as the secondary MCL standards (300 µg/L for iron and 50 µg/L for manganese). Conductivity levels exceeded the Basin Plan standard of 150 µmhos/cm, but were below the secondary MCL standard of 900 µmhos/cm. The secondary MCL standards are established as a threshold above which constituents may impart undesirable tastes and odors, or can cause staining and scaling, but do not pose a health threat. Therefore, the exceedance of the secondary MCL standards for iron and manganese concentrations in some of the samples collected does not pose a risk to human health. Basin Plan limits for conductivity, iron, and manganese were exceeded, but Basin Plan limits would only apply to groundwater pumped from the Plant Site if the water was to be discharged directly to the San Joaquin River. The project proposes to discharge groundwater to groundwater recharge trenches along the Plant Site boundary and not to the San Joaquin River. In addition, as described in Section 4.9, of this Draft EIR, there are no known sources of potential hazardous materials contamination of the groundwater at the Plant Site or its vicinity; therefore, pumping of groundwater under the proposed project would not have the potential to spread contaminated groundwater. For these reasons, the pumping of dewatered groundwater at the Plant Site into proposed groundwater recharge trenches along the western and southern perimeters of the site would not have the potential to substantially degrade groundwater quality. This impact would be less than significant.

The accidental release of hazardous materials within the Plant Site could result in the degradation of groundwater quality during mining and reclamation should the hazardous materials migrate into the subsurface. As detailed under Impact 4.10-1, the proposed project would be required to comply with the NPDES program and CUPA program and implement SWPPP, WDR, HMBP, and SPCC Plan requirements to prevent release of hazardous materials on the Plant Site due to mining, processing, and production operations and reclamation activities. Therefore, compliance with existing regulatory requirements would reduce the potential accidental releases of hazardous materials during mining and reclamation activities to violate water quality standards or substantially degrade groundwater quality on the Plant Site to less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.10-5: Violate Groundwater Quality Standards or Otherwise Substantially Degrade Groundwater Quality at the Plant Site due to the Ponding of Water in the Excavation

Once mining and reclamation are complete and dewatering of the entire quarry pit excavation, or of any individual phase of the excavation, ceases, the Plant Site excavation would begin to fill with water. Upon the completion of Phase 1 mining operations at the Plant Site, the entire quarry pit excavation would have a bottom depth of approximately 252 feet above msl and would fill with groundwater and rainfall to form a 20-foot-deep lake with a surface elevation of about 272 feet above msl, which is about 40 feet below the surrounding grade (shown in Figure 2-10, "Quarry Site Final Reclaimed Conditions," in Chapter 2 of this Draft EIR). That elevation is approximately 10 feet below the current groundwater level at the site. The Plant Site Groundwater Conditions Report estimates that 125 acre-feet per year of rainfall and 315 acre-feet per year of groundwater inflow would enter the reclaimed mining excavation. The inflows would be balanced by 400 acre-feet per year of evaporation from the reclaimed pond surface and about 40 acre-feet per year of evapotranspiration from riparian vegetation that would form around the pond.

Elevated iron and manganese levels are common in and around reclaimed mining excavations that have filled with water because decaying vegetation on the bottom of ponds can create oxygen-deficient, or reducing, conditions (EMKO 2023). The reducing conditions mobilize naturally occurring iron and manganese from within the silts and other sediments present at the bottom of the reclaimed mining excavations (EMKO 2023). Therefore, it is anticipated that groundwater and decay of the riparian vegetation could result in the accumulation of iron and manganese within the reclaimed Plant Site excavation if reducing conditions develop at the bottom of pond (EMKO 2023). Iron and manganese have secondary maximum contaminant levels, meaning that their presence imparts undesirable tastes and odors, or can cause staining and scaling, but does not pose a health threat. These conditions would not alter water quality outside of the site boundaries unless it were to migrate substantially in the groundwater. The water budget for the reclaimed conditions presented in the Plant Site Groundwater Conditions Report indicates that there would not likely be any groundwater outflow from the final reclaimed pond. However, due to the potential for groundwater quality standards to be exceeded in the pond due to the buildup of iron and manganese, this is considered a potentially significant impact to groundwater quality. Similarly, if water is allowed to begin filling any individual excavated and reclaimed area of the Plant Site prior to the completion of mining across the entire site, a pond would form in this area and the buildup of iron and manganese could occur. Mitigation Measure 4.10-5a presents an adaptive management program at the Plant Site that would require ongoing sampling

and monitoring of conditions within any reclaimed pond that forms after mining in part, or all, of the Plant Site area is completed and water is allowed to fill all or part of the excavation. The adaptive management program would be responsive to changing water quality conditions in the reclaimed pond over time. Under the program, monitoring would occur every six months and would consist of field measurements near the surface of the water and near the bottom of the column. Monitoring would measure pH, conductivity, temperature, dissolved oxygen, and oxidation-reduction potential. If any of the action levels specified in the mitigation measure are exceeded for two successive monitoring events, then water samples would be collected from the Plant Site pond and submitted to an analytical laboratory for analysis of iron and manganese. If the iron concentration exceeds its secondary MCL and NPDES discharge limit of 300 ug/L, or manganese exceeds its secondary MCL and NPDES discharge limit of 50 ug/L, then the laboratory testing would be completed again in six months to assess whether there are potential seasonal influences. If the iron and/or manganese levels persist above their respective water quality standards, then the mitigation measure recommends feasible actions that can be taken to address reducing conditions in the pond. Monitoring results would be provided to the County on an annual basis. To ensure funding and implementation of the adaptive management program, Mitigation Measure 4.10-5b requires the establishment of an endowment dedicated to the perpetual implementation of the adaptive management program and implementation of corrective actions, or until conditions have stabilized and no further monitoring is required, as described in Mitigation Measure 4.10-5a.

Level of Significance Before Mitigation: Potentially significant

Mitigation Measure 4.10-5a: *Plant Site Pond Adaptive Management Program*

The Operator of the Rockfield Quarry shall implement an adaptive management program at the Plant Site that includes monitoring, comparison of monitoring results with action levels, and subsequent implementation of mitigation measures if the action levels are exceeded. The impact does not have the potential to occur until after mining on part or all of the Plant Site area is completed, and water is allowed to fill all or a part of the excavated quarry pit. Therefore, monitoring under the adaptive management program shall begin when the quarry Operator allows water to begin to fill all or part of the excavated mine pit. At the latest, monitoring shall begin at the completion of the Phase 1 mining at the Plant Site.

A qualified professional shall be responsible for the monitoring and reporting to be conducted under the adaptive management program. The qualified professional's qualifications shall be provided to the County prior to the start of the monitoring under the adaptive management program. Every six months, the qualified professional shall

supervise field measurements for the parameters, and associated action levels, listed below.

- *pH>8.5*
- *Conductivity >700 micromhos/cm @ 25 degree C*
- *Temperature (no action level)*
- *Dissolved oxygen (DO) <8 mg/L or <70% of saturation*
- *Oxidation-reduction potential (ORP) <0*

These parameters are general indicators of water quality and the potential for reducing conditions to form that could mobilize naturally occurring iron and manganese and thereby degrade water quality. An annual report documenting the methodology and results of the sampling shall be submitted to Fresno County.

The field measurements shall be conducted at two depths: (1) near the surface of the water and (2) near the bottom of the water column. If any of the action levels shown in the "Field Indicator Parameters" table are exceeded for two successive monitoring events, then water samples shall be collected from the Plant Site pond and submitted to an analytical laboratory for analysis of iron and manganese. If the iron concentration exceeds its secondary MCL and NPDES discharge limit of 300 ug/L, or manganese exceeds its secondary MCL and NPDES discharge limit of 50 ug/L mg/L, then the laboratory testing shall be completed again in six months to assess whether there are potential seasonal influences.

If the iron and/or manganese levels do not consistently remain below their respective water quality standards, then the semiannual field monitoring shall continue. If no exceedances of the action levels shown in the "Field Indicator Parameters" table or of the iron and manganese water quality standards occur for a period of five years, then the water quality conditions in the reclaimed Plant Site pond shall be considered to have stabilized and no further monitoring shall be necessary. A final monitoring report shall be submitted to the County documenting the cessation of monitoring.

If the iron and/or manganese levels persist for five consecutive years above their respective water quality standards, then the following mitigation actions shall be implemented:

- *Aeration or mechanical circulation of the water from the bottom of the pond to the surface of the pond. Reducing conditions that favor high pH values and low dissolved oxygen (DO) values, resulting in higher concentrations of iron and manganese, typically form at the bottom of ponds due to the breakdown of organic matter, such as dead aquatic or riparian vegetation. Aeration or mechanical*

circulation of the water from the bottom of the pond to the surface of the pond would better distribute DO throughout the water column and would minimize the formation of reducing conditions.

- *Additional Measures. If substantial amounts of submerged aquatic vegetation form within the pond, or riparian vegetation such as reeds and cattails form around the perimeter of the pond, and aeration or water circulation alone is insufficient to eliminate the reducing conditions, then further measures to minimize the vegetation would be implemented. Such measures may include physical removal by hand or mechanical equipment (e.g. dredging), growth prevention using physical barriers (e.g. tarps or bottom barriers) in areas of heavy growth, or use of approved terrestrial or aquatic herbicides if other methods are not feasible or effective.*

Monitoring results shall be reported to the County in an annual report that would be submitted at the end of the first quarter of every year. The annual report shall describe any measures that have been or are planned to be taken based on the monitoring results and provide an analysis of the effectiveness of the measures, and a description of any further recommended measures, as part of subsequent annual reports.

Mitigation Measure 4.10-5b: *Plant Site Pond Adaptive Management Program Funding Mechanism*

Prior to the completion of mining, the Operator shall establish a funding mechanism to provide a permanent funding source for the monitoring of the final reclaimed pond on the Plant Site. The funding mechanism shall be sufficient to cover costs associated with the annual monitoring and reasonably foreseeable actions that may be required to address oxygen reducing conditions, if necessary. The funding mechanism shall be managed by a third party approved by the Operator and County. The Operator shall submit for County review and approval, a proposed funding mechanism and cost basis. If conditions stabilize and no further monitoring is required, as described above in Mitigation Measure 4.10-5a, then the funding mechanism would be cancelled, and any funds returned to the Operator.

Level of Significance After Mitigation: Less than significant.

Impact 4.10-6: Violate Groundwater Quality Standards or Otherwise Substantially Degrade Groundwater Quality at the Quarry Site During Mining and Reclamation

Dewatering of groundwater from the quarry pit would be necessary throughout the mining period for the Quarry Site, as it is under existing conditions. The water pumped

from the quarry pit excavation would continue to be pumped by water trucks and used for dust control and would continue to be piped to the Northeast Pond and to existing and proposed groundwater recharge trenches located along the western perimeter of the Quary Site.

As described in the "Groundwater Quality at the Quarry Site" subsection of Section 4.10.1.7, above, groundwater sampling of monitoring wells at the Quarry Site indicates that all constituents were generally within water quality standards, except for nitrate, manganese, and gross alpha activity, which exceeded thresholds in some of the wells sampled. The nitrate present in groundwater at the Quarry Site is likely a relic of past agricultural activity in the area because there has been no use of any constituents at the Quarry Site to date that could release nitrates (EMKO 2023). As described in the "Salt and Nitrate Control Program" subsection of Section 4.10.2.2, above, elevated nitrates are a regional issue that is being addressed by the RWQCB through the SNMP. The Rockfield Quarry Operator intends to comply with the SNMP by funding the local P&O study which will evaluate existing conditions, policies, and engineering alternatives to identify salt management projects and actions to achieve salt sustainability in the Central Valley. The concentrations of manganese in some wells exceed the Basin Plan standard and secondary MCL standard of 50 μg/L. Manganese is a naturally occurring mineral component within the geologic materials at the Quarry Site (EMKO 2023). As noted in Impact 4.10-4, above, the secondary MCL standard is established to avoid undesirable tastes and odors, or to avoid staining and scaling, but an exceedance would not pose a threat to human health. The Basin Plan limit for manganese would only apply to groundwater pumped from the Quarry Site if the water was to be discharged directly to the San Joaquin River. The project proposes to use and discharge groundwater to the Northeast Pond and recharge trenches within the Quarry Site and not to the San Joaquin River, and therefore the exceedance of the Basin Plan limit for manganese in groundwater on the site does not have the potential to violate water quality standards. The gross alpha activity concentrations at well MW-2M appear to differ substantially from samples collected at all other wells at the Quarry Site and may not be representative of site conditions (EMKO 2017). The groundwater pumped into the Northeast Pond and recharge trenches would continue to consist of local groundwater, which, as described above, is generally within established water quality standards. In addition, as described in Section 4.9, of this Draft EIR, there are no known sources of potential hazardous materials contamination of the groundwater at the Quarry Site or its vicinity; therefore, pumping of groundwater to the Northeast Pond under the proposed project would not have the potential to spread contaminated groundwater. For these reasons, the pumping of dewatered groundwater at the Quarry Site into proposed groundwater recharge

trenches along the western boundary of the site would not have the potential to substantially degrade groundwater quality relative to existing conditions.

The use of explosives as part of blasting operations on the Quarry Site could result in the degradation of groundwater water quality if the blasting agents are not completely detonated, spread into the groundwater when placed in the borehole, or are released onto the ground surface where they can migrate into the groundwater below. There have been multiple studies completed on the effects of blasting on groundwater. These studies include Bond (1975), Berger (1980), and Beaver (1984), which concluded that there is no significant long-term chemical or mineralogical changes observed in groundwater that could be attributed to blasting. In the study performed by Bond (1975), water samples were taken in the same hole that explosives were detonated in and no change in water quality due to the decomposition products of the explosives could be discerned from the analysis. Therefore, it is unlikely that blasting would result in impacts to groundwater quality. Furthermore, the *Blasting Protocols* (see Appendix H-6 of this Draft EIR) required to be implemented by Mitigation Measure 4.10-1, specify practices to prevent the contamination of groundwater and surface water as a result of blasting. These practices include the use of explosive products with appropriate water resistance for the site conditions present, the preparation of designs and loading controls by qualified blasting contractors or other experts to ensure complete detonation, and the management of muck piles (the fragmented pieces of rock left after the blast) so as to prevent interaction with stormwater. These protocols would minimize the risk of substantial groundwater water quality degradation by blasting on the Quarry Site.

The accidental release of hazardous materials within the Quarry Site could result in the degradation of groundwater quality during mining and reclamation should the hazardous materials migrate into the subsurface. As detailed under Impact 4.10-1, above, the proposed project would be required to comply with the NPDES program and CUPA program and implement SWPPP, WDR, HMBP, and SPCC Plan requirements to prevent release of hazardous materials on the Quarry Site due to mining, processing, production operations and reclamation activities. Therefore, compliance with existing regulations and implementation of Mitigation Measure 4.10-1 would reduce the potential to violate water quality standards or substantially degrade groundwater quality on Quarry Plant Site to less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure: *Implement Mitigation Measure 4.10.1*

Level of Significance After Mitigation: Less than significant.

Impact 4.10-7: Violate Groundwater Quality Standards or Otherwise Substantially Degrade Groundwater Quality at the Quarry Site Due to the Ponding of Water in the Excavation

Once mining and reclamation are complete, the quarry pit excavation would begin to fill with water. Upon the completion of Phase 1 and Phase 2 mining operations at the Quarry Site, the entire quarry pit excavation would have a bottom depth of approximately 290 feet below msl and would fill with groundwater and rainfall to form a 100-foot-deep lake with a surface elevation of about 190 feet below msl, which is about 500 feet below the surrounding grade (shown in Figure 2-10). Once the quarry pit fills to that level, approximately 195 acre-feet of groundwater and 260 acre-feet of rainfall and local runoff would enter the Quarry on an annual basis. Thus, annual inflows to the Quarry would be 455 acre-feet per year. Evaporation would remove approximately 380 acre-feet per year. Up to 50 acre-feet per year may be pumped to the Northeast Pond or the western trench to provide groundwater recharge. Approximately 15 acre-feet per year would leave as groundwater outflow. The local rainfall and runoff would have very little dissolved solids, while the average total dissolved solids (TDS) in the groundwater entering the quarry would be approximately 230 mg/L. Thus, the estimated average TDS of the total water entering the quarry lake would be approximately 100 mg/L.[2] Evaporation of water from the quarry lake would cause some concentration of the TDS. However, since the rate of inflow of 455 acre-feet per year exceeds the evaporation rate of 380 acre-feet per year, dissolved solids would not accumulate over time because they would be continually diluted by the inflow of water with an average TDS of 100 mg/L. The same processes would apply to individual mineral components (such as nitrate, chloride, or calcium) and metals (such as iron and manganese) (EMKO 2023). Since the amount of rainfall and runoff that enter the reclaimed lake each year would exceed the amount of groundwater inflow, the evaporation would not substantially increase the concentrations of minerals, metals, and other dissolved solids in the water in the reclaimed lake over time. Therefore, the potential for the quarry pit lake to accumulate concentrations of constituents that would violate water quality standards or waste discharge requirements, or otherwise degrade water quality, would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

[2] Calculated as (195 acre-feet X 230 mg/L)/455 acre-feet

Impact 4.10-8: Substantially Decrease Groundwater Supplies During Mining Operations and After the Completion of Reclamation at the Plant Site Such that the Project Could Interfere with Existing Groundwater Supply Wells

Dewatering at the Plant Site would be implemented during Phase 1 operations once mining reaches the depth of the groundwater surface within the alluvial aggregate. The Plant Site Groundwater Conditions Report estimates that the dewatering requirement could be as high as 1,610 acre-feet per year. However, the water pumped from the excavation area for dewatering purposes would primarily be pumped to proposed groundwater recharge trenches and ponds and consequently there would not be a substantial reduction in local groundwater volumes during mining.

There are approximately eight offsite supply wells located within approximately one-half mile of the perimeter of the Plant Site, as shown on Figure 4.10-2. Table 4.10-8, "Estimated Drawdown of Groundwater Levels in Wells Near the Plant Site," above, shows the existing depth to groundwater at each of these wells, the anticipated depth to groundwater after the Plant Site has been reclaimed, and the estimated reduction in the height of the water column in each of the wells.

The use of the recharge trenches would limit the amount of drawdown of the water table in the unconfined alluvial aquifer to six to eight feet at a distance of 500 feet from the excavation (KDSA 2021). As shown in Table 4.10-8, there are no supply wells within 500 feet of the excavation. At a distance of 500 feet to 1,000 feet from the excavation, within which there are three wells, the drawdown would be approximately three to five feet (KDSA 2021). The level of drawdown would continue to decrease beyond this distance. There are five wells between 1,000 feet and one-half mile of the perimeter of the Plant Site. As indicated in Table 4.10-8, this level of drawdown is not an appreciable portion of the available water column of the existing wells in surrounding areas, representing no more than five percent of the total available water column in any of the wells, and therefore would not result in a substantial depletion of water supplies that could impede the existing use of groundwater in the basin.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Table 4.10-8
Estimated Drawdown of Groundwater Levels in Wells Near the Plant Site

Well #	Distance from Edge of Pit (ft)	Total Depth (ft bgs)	Depth to Static Water Level (ft bgs)	Existing Water Column (ft)	Depth to Static Water Level After Reclamation (ft bgs)	Water Column After Reclamation (ft)	Reduction in Water Column (ft)	Reduction in Water Column (percent)
31D	660	192	30	162	36	156	6	3.7%
1A3	660	224	105	119	111	113	6	5.0%
1A1	990	250	100	150	105	145	5	3.3%
1A2	1,320	200	97	103	99	101	2	1.9%
35J	1,320	260	27	233	29	231	2	0.9%
1A4	1,650	450	93	357	94	356	1	0.3%
1H2	2,640	260	117	143	117	143	0	0.0%
SW2	2,640	170	25	145	25	145	0	0.0%

Table Source: EMKO 2023.
Table Notes: Well locations are shown in Figure 4.10-2.

Impact 4.10-9: Substantially Decrease Groundwater Supplies During Mining Operations and After the Completion of Reclamation at the Plant Site such that the Project May Impede Sustainable Groundwater Management of the Basin

Aggregate processing at the Plant Site is accomplished using water from the San Joaquin River. The use of river water at the Plant Site under the proposed project operations during Phase 1 would be reduced from approximately 295 acre-feet per year to an estimated 125 acre-feet per year. This is because the operation of a new aggregate processing facility at the Quarry Site would decrease the amount of aggregate processed at the Plant Site. Therefore, the continued use of San Joaquin River water under the proposed project would not have the potential to decrease local groundwater supplies through the use of river water.

During Phase 1 operations, water use from the groundwater supply well would increase from a total of 35 acre-feet per year to 55 acre-feet per year at the ready-mix concrete plant, which is an increase in the pumping of groundwater by about of 20 acre-feet per year. After the completion of Phase 1 operations, mining and reclamation activities at the Plant Site would cease and groundwater would no longer be pumped. Under reclaimed conditions, an average of 315 acre-feet of groundwater and 125 acre-feet of rainfall would enter the reclaimed Plant Site mining excavation and be consumed by evaporation and evapotranspiration each year. Additionally, diversion of up to 295 acre-feet per year from the San Joaquin River would cease, making that water available for groundwater recharge through the riverbed or for use in lieu of groundwater within the North Kings GSA management area. Thus, after the completion of mining and reclamation, the net consumption of groundwater and in lieu supplies at the Plant Site would increase by 110 acre-feet per year relative to existing conditions (i.e., 440 acre-feet after reclamation minus 330 acre-feet existing).

As described in the "Regional Groundwater Conditions" subsection of Section 4.10.1.7, above, the North Kings GSA is not experiencing critical overdraft conditions. For the 2016-2017 water year, the overall water balance for the North Kings GSA was approximately +39,200 acre-feet (North Kings GSA 2022, Table 3-9). Under normal year, dry year, and wet year conditions for historical conditions experienced from 1997-2011, the water balance within the North Kings GSA is projected be -6,500 acre-feet/year, -151,600 acre-feet/year, and +175,400 acre-feet/year, respectively (North Kings GSA 2022, Table 3-8). The increase in groundwater consumption of approximately 20 acre-feet per year during project operation and the post-reclamation increase in net consumption of groundwater and in lieu supplies of 110 acre-feet per year are several orders of magnitude smaller than the fluctuations in the water balance of the North Kings GSA

area, and therefore would not have the potential to substantially decrease groundwater supplies such that the reclaimed condition of the Plant Site would impede the sustainable groundwater management of the North Kings subbasin. Therefore, the potential of the operational period and reclamation period water consumption on the project site to impede the sustainable groundwater management of the basin would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.10-10: Substantially Decrease Groundwater Supplies During Mining Operations and After the Completion of Reclamation at the Quarry Site such that the Project Could Interfere with Existing Groundwater Supply Wells

The Quarry Site Groundwater Conditions Report (KDSA 2021) provides an analysis of the drawdown that would occur in the areas surrounding the Quarry Site due to dewatering of the quarry pit. The drawdown analysis applies specifically to wells that are completed in the hard rock, or the hard rock and weathered rock. Because the alluvium has already been removed from the Quarry site, no further effects related to dewatering can occur within the alluvium as compared to the existing environmental baseline (EMKO 2023).

There are approximately 14 offsite supply wells located at a range of 110 feet to 3,850 feet from the edge of the quarry pit as shown on Figure 4.10-4 and described in the subsection "Groundwater Supply Wells in the Vicinity of the Quarry Site," in Section 4.10.1.6, above. Table 4.10-9, "Estimated Drawdown of Groundwater Levels in Wells Near the Quarry Site," shows the distance from the edge of the quarry pit, the anticipated drawdowns due to dewatering, and the potential reduction in the water column at each well, for conditions that would occur without any pumping of water from the quarry pit into the recharge ditches and Northeast Pond, and for conditions that would occur during proposed recharge operations, when water is pumped into the perimeter ditches and the Northeast Pond at the time of maximum dewatering (i.e., when mining reaches the maximum proposed depth of 600 feet bgs).

Table 4.10-9
Estimated Drawdown of Groundwater Levels in Wells Near the Quarry Site

Well ID	Total Depth (ft bgs)	Depth to GW (ft bgs)	Water Column (ft)	Distance from Edge of Quarry (ft)	Drawdown Due to Dewatering (ft)		Depth to Groundwater Due to Dewatering (ft bgs)		Water Column During Dewatering (ft)		Reduction in Water Column (percent)	
					Without Recharge	With Recharge	Without Recharge	With Recharge	Without Recharge	With Recharge	Without Recharge	With Recharge
24C North	250	17	233	1500	52	26	69	43	181	207	22%	11%
24C South	605	14	591	750	69	34.5	83	48.5	522	556.5	12%	6%
24F	700	40	660	700	70	35	110	75	590	625	11%	5.3%
Road 204 West	277	Dry	None	9325	0	0	na	na	na	na	na	na
Road 204 East	850	77	773	7650	0	0	na	na	na	na	na	na
Beck Ranch "Ranch Well"	206	40	166	925	64	32	104	72	102	134	39%	19%
Beck Ranch "Oleander Well"	180	30	150	1070	61	30.5	91	60.5	89	119.5	41%	20%
Beck Ranch "New Well"	310	175	135	1215	58	29	233	204	77	106	43%	21%
Beck Ranch "Dog House Well"	170	30	140	110	88	44	118	74	52	96	63%	31%
CSA 44C #2	350	43	307	1140	59	29.5	102	72.5	248	277.5	19%	10%
CSA 44C #3	210	46	164	1115	60	30	106	76	104	134	37%	18%
Lost Lake Park Well	226	14	212	2585	33	16.5	47	30.5	179	195.5	16%	8%
N Friant A	760	90	670	2750	31	15.5	121	105.5	639	654.5	5%	2.3%
N Friant B	330	83	247	3850	17	8.5	100	91.5	230	238.5	7%	3.4%

Table Sources: KDSA 2021; EMKO 2023
Table Notes:
na = not applicable because well dry or well outside zone of influence

Without the implementation of the proposed recharge operations during dewatering, the projected drawdown would be approximately 90 feet at the edge of the quarry pit. The projected drawdown would be half that value (45 feet) at a distance of 2,000 feet from the edge of the quarry pit and would be approximately 15 feet at a distance of 4,000 feet from the edge of the quarry excavation. The drawdown would decrease to less than one foot at a distance of 5,400 feet, or just over one mile, from the edge of the quarry pit.

However, it is most likely that the recharge operations would be conducted throughout the mining and active dewatering period as the primary means to manage the water pumped from the excavation. The recharge operations would result in drawdown levels that would be approximately one-half of those which would occur without any recharge operations (KDSA 2021). The rapid response to elevated rainfall seen in recent groundwater level monitoring data demonstrates the viability and anticipated efficacy of the proposed recharge operations (EMKO 2024).

The largest reductions in the available groundwater column would occur in the wells on the Beck Ranch (Ranch, New Well, Dog House, Oleander well in Table 4.10-9 and Figure 4.10-4) both because they are relatively close to the edge of the quarry excavation and because they are relatively shallow and, thus, have a smaller initial water column. The second largest reductions in the available groundwater column, on a percentage basis, would occur in the Fresno County CSA 44C wells. The CSA 44C wells draw water from all three water bearing zones (i.e., alluvium, weathered zone, and hard rock). Static (i.e., non-pumping) groundwater levels in the CSA 44C wells average approximately 45 feet bgs. Groundwater levels at the CSA 44C wells at the time of maximum dewatering are estimated to be approximately 76 feet bgs with recharge operations or approximately 106 feet bgs without recharge operations. Thus, the estimated decrease in the static water level at the CSA 44C wells due to the project dewatering would range from 30 feet to 60 feet, depending on whether recharge operations take place during dewatering.

As described in Section 4.10.1.9, above, water levels drop markedly in both wells during pumping. Due to this magnitude of decrease in groundwater levels during pumping cycles, the lowering of groundwater levels in the vicinity of these two wells could result in a proportional decline in monthly production volumes. If water production volumes from the CSA 44C wells decline to the point where current water demand cannot be met, then this would result in a significant impact to available groundwater supply. Similar effects could occur in the other water supply wells near the Quarry Site. This is a potentially significant impact.

After the completion of mining and reclamation, similar potential impacts to the groundwater supply wells shown in Table 4.10-9 could occur due to the local decrease in

static groundwater levels as a result of the flow of groundwater to the proposed quarry pit. This is also a potentially significant impact. Mitigation Measure 4.10-10a would require the implementation of an adaptive management strategy during mining and after the completion of reclamation that includes monitoring, comparison of monitoring results with action levels, and implementation of corrective measures if the action levels are exceeded. To ensure funding and implementation of the adaptive management program, Mitigation Measure 4.10-10b requires the establishment of an endowment dedicated to the perpetual implementation of the adaptive management program and implementation of corrective actions.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.10-10a: *Quarry Site Groundwater Adaptive Management Program*

To assess any potential effect on the CSA 44C wells due to the proposed excavation of a hard rock quarry pit at the Quarry Site, monitoring shall be conducted in the nested set of wells between the Northeast Pond and the CSA 44C wells, and in the CSA 44C wells themselves. The existing MW-3 well cluster, with individual wells completed in the alluvium, weathered rock, and hard rock, is appropriately located for this purpose. In addition, the data from the MW-3 well cluster provides a record of water level conditions at this location for several years prior to implementation of the project. Pumping and water level data from the CSA 44C wells has been provided by Fresno County to support the analysis in this EIR. Fresno County will continue to provide these data sets to the Operator for the purposes of implementing this Adaptive Management Program. Monitoring of the water levels in the MW-3 cluster shall be conducted using downhole pressure transducers with dataloggers. Dataloggers are already installed in the MW-3 wells.[3] The dataloggers shall be programmed to record water levels at least once every six hours such that a range of static and pumping water level effects would be captured. The data shall be downloaded every six months for review and subsequent inclusion in annual mitigation monitoring reports. The annual mitigation monitoring reports shall be prepared by a Professional Geologist/Certified Hydrogeologist and submitted to Fresno County annually at the end of the first quarter of every year. The annual report shall describe any additional measures that have been or are planned to be taken based on the monitoring results, in accordance with this adaptive management program. The first annual report shall be completed at the end of the first quarter of the year after the use permit becomes active and shall describe the baseline water level ranges at the MW-3

[3] Installation of dataloggers was previously attempted in the CSA 44C wells. Due to the construction of the well head and the pump system, it was not possible to install dataloggers in a manner that would not potentially interfere with the operation of the pumping equipment.

cluster for the alluvium, weathered rock, and hard rock, specifically identifying conditions during drought periods, wet periods, and seasonal fluctuations.

If the monitoring data indicate that groundwater levels in any of the monitored wells drop such that the available water column decreases by more than 15 percent[4], then a significant impact to available groundwater supply will have occurred. The data from the MW-3 well cluster shall be evaluated to verify whether the impact is specific to the weathered rock and/or hard rock and is not due to other unrelated factors, such as drought, a reduction in regional groundwater recharge (for example, by changes in operating practices along the Friant Kern Canal), or use of groundwater by future developments located upgradient to the north and northeast of the Quarry Site and CSA 44C wells. If the additional assessment confirms that a decrease in water levels greater than 15 percent is exclusively attributable to mine dewatering, then corrective measures would be implemented.

"For this analysis, a factor of safety has been applied, such that a criterion of 15 percent reduction in the water column is used to define the condition where a potentially significant impact may occur to the production capacity of a well. Use of the 15 percent criterion is conservative (i.e., protective of groundwater resources) not only due to the applied factor of safety, but also because it accounts for shallow wells or wells with a small water column that may be at a greater distance from the quarry. Other approaches that are based only on the total amount of drawdown do not take into consideration the effects to shallow wells at greater distances from the dewatering location (i.e., the quarry)" (EMKO, October 3, 2023).

The initial corrective measure would be to divert additional water from the mining excavation into the Northeast Pond or to a recharge trench to be constructed along the northeast side of the Quarry Site to enhance recharge in the area of CSA 44C wells. The rate of pumping into the Northeast Pond or recharge trench would be increased until the water level in the MW-3 well cluster and the CSA 44C wells recovers to a point between baseline and 15% below baseline. If, during mining, all available water from dewatering is being pumped to the Northeast Pond or recharge trench and the water level in the MW-3 well cluster remains 15% or more below the baseline elevations, then mining could not progress to greater depths in the quarry. If such a condition occurred, then the Reclamation Plan would be amended to reflect the adjusted depth of the quarry.

[4]Analytical solutions for drawdown in a well in an unconfined aquifer indicate that when the drawdown reaches 30% to 45% of the available water column, the reduction in the transmissivity is large enough to potentially cause the drawdown rate to become unstable and increase rapidly. Therefore a 2 to 3-fold factor of safety was used to identify the 15% criterion for this Adaptive Management Plan.

For wells completed west of the Quarry Site, and for the San Joaquin River, the existing MW-1 monitoring well cluster provides an appropriate monitoring location for the purposes of this adaptive management plan. Water levels have been measured in the three wells at the MW-1 cluster since August 2017 using downhole pressure transducers with dataloggers. The water levels recorded in the MW-1 well cluster from 2017 until the time that mining and dewatering in the weathered rock begins after approval of the project will be used to define the baseline groundwater level conditions. Baseline water level ranges will be identified for the alluvium, weathered rock, and hard rock, specifically identifying conditions during drought periods, wet periods, and seasonal fluctuations, and, similar to the MW-3 well cluster, these baseline conditions shall be documented in the first annual report. If access can reasonably be gained to any of the five private wells in Table 4.10-9 located to the west of the Quarry Site from the private owners, then those wells should also become part of the monitoring program. Groundwater levels would continue to be recorded using downhole pressure transducers with dataloggers, programmed to record water levels at least once every six hours such that a range of static and pumping water level effects would be captured. The data would be downloaded every six months for review and subsequent inclusion in annual mitigation monitoring reports. The annual report would also describe any additional measures that have been or are planned to be taken based on the monitoring results, in accordance with this adaptive management program.

If the monitoring data indicate that groundwater levels in any of the monitored wells drop such that the available water column decreases by more than 15 percent, then a significant impact to available groundwater supply will have occurred. This conclusion would be confirmed by analysis of data from the MW-1 well cluster to verify that the impact is specific to the weathered rock and/or hard rock and is not due to other unrelated factors, such as drought, future developments in the area that rely on groundwater, or a reduction in regional groundwater recharge (for example, by changes in operating practices on the San Joaquin River or the Friant Kern Canal). For the San Joaquin River, the impact must be specific to both the alluvium and weathered rock aquifer zones. If the additional assessment confirms that the decrease in water levels is primarily due to mine dewatering, then corrective measures would be implemented.

The initial corrective measure would be to divert additional water from the mining excavation into the recharge trench adjacent to the San Joaquin River on the west side of the Quarry Site. The rate of pumping into the recharge trench would be increased until the water column in the MW-1 well cluster and any monitored private wells west of the Quarry Site recover to within 85 percent or more of baseline levels. If, during mining, all available water from dewatering is being pumped to the western recharge trench and the water column in the MW-1 well cluster remains below 85 percent of baseline elevations,

then mining could not progress to greater depths in the quarry. If such a condition occurred, then the Reclamation Plan would be amended to reflect the adjusted depth of the quarry.

If mining progresses to the full approved depth without causing a potentially significant impact to nearby wells or flows in the San Joaquin River, then monitoring in the MW-1 and MW-3 well clusters will continue for at least 3 years, to include at least two below-normal rainfall years or one critically dry year, as defined by DWR. Dewatering will cease once mining is completed, so groundwater levels will begin to recover. During the post-mining monitoring period, the rate that water is pumped to the Northeast Pond and the recharge trenches will be reduced proportionally in accordance with the rate that the water level in the pond recovers. If the drawdown in the MW-1 and MW-3 monitoring well clusters is less than 15% at the end of the monitoring period, then no further mitigation is required, monitoring can cease, and the related pumps, piping, and other equipment can be removed from the Quarry Site. However, if at the end of the monitoring period, the drawdown in the monitoring wells is greater than 15%, then pumping to the Northeast Pond, east recharge trench, and/or west recharge trench, as appropriate based on the post-mining monitoring data, must continue indefinitely to reduce the drawdown in the monitoring well clusters below the 15% criterion.

Mitigation Measure 4.10-10b: *Quarry Site Groundwater Adaptive Management Program Funding Mechanism*

Prior to the completion of mining, the Operator shall establish a funding mechanism to provide a permanent funding source for the initial 3 years of monitoring of groundwater levels in the MW-1 and MW-3 well clusters, and review of CSA 44C well monitoring data from the County, after mining ceases and dewatering is no longer occurring in the quarry pit. The funding mechanism shall be sufficient to cover costs associated with the annual monitoring and reasonably foreseeable actions that may be required to address excessive drawdown, including continuing to pump water to the Northeast Pond and recharge trenches indefinitely, if necessary. The Operator shall submit for review and approval by the Agency Director, or designee, ("Director") a proposed funding mechanism (e.g., a bond) and cost basis to secure costs related to the required Quarry Site groundwater adaptive management activities as described in Mitigation Measure 4.10-10a, above. The funding mechanism shall be held by the County or held and managed by a third party approved by the Operator and County, as determined by the Director. If conditions stabilize and no further monitoring is required, as described in Mitigation Measure 4.10-10a, then the funding mechanism would be cancelled, and any remaining funds returned to the Operator.

Level of Significance After Mitigation: Less than significant.

Impact 4.10-11: Substantially Decrease Groundwater Supplies During Mining Operations and After the Completion of Reclamation at the Quarry Site Such that the Project May Impede Sustainable Groundwater Management of the Basin

As the mining excavation at the Quarry Site is expanded, groundwater within the relatively thin alluvium and weathered rock layers would no longer exist onsite because those geologic deposits would be excavated across most of the site. Groundwater would be present in those shallow units along the west side of the site, where the recharge trenches exist, and in the area near the Northeast Pond. As the mining excavation extends to greater depths in the hard rock, the amount of dewatering necessary would increase. However, the increase in dewatering would not be directly proportional to the increase in depth of the quarry pit. This is because the extent of fracturing within hard rock geologic units tends to be greater at shallow depths and decreases with depth due to the pressure of the overlying rock, which tends to push any fractures closed. The Quarry Site Groundwater Conditions Report estimates that the rate of dewatering would increase from 320 acre-feet per year under current conditions, to 375 acre-feet per year after 30 years of mining, to 405 acre-feet per year after 100 years of mining, at the end of the mining period. In other words, even though the depth of the quarry pit would increase almost 10-fold (i.e., 1,000%) compared to existing conditions, the dewatering rate would increase by less than 30%.

After mining and reclamation of the Quarry Site is complete, an average of 285 acre-feet of groundwater and 315 acre-feet of rainfall would enter the reclaimed Quarry Site each year. Of this total, 15 acre-feet per year would flow out of the Quarry Site as groundwater while 585 acre-feet per year would evaporate. Thus, the net decrease in groundwater supplies would be up to 270 acre-feet per year (i.e., 285 acre-feet inflow minus 15 acre-feet outflow). After the completion of mining and reclamation, the consumption of groundwater at the Quarry Site would be 145 acre-feet more per year than under existing conditions (i.e., 270 acre-feet after reclamation minus 125 acre-feet existing). The increase in dewatering during mining operations and post-reclamation increase in groundwater consumption would both be several orders of magnitude smaller than the fluctuations in the water balance of the North Kings GSA area (the Groundwater Sustainability Plan indicates that the water balance within the North Kings GSA is projected be -6,500 acre-feet/year, -151,600 acre-feet/year, and +175,400 acre-feet/year, respectively). Furthermore, as stated in the "Regional Groundwater Conditions" subsection of Section 4.10.1.6, above, the North Kings GSA area GSP defines the vertical extent of the eastern one-quarter of the North Kings GSA aquifer system, where the Plant Site and Quarry Site are located, as the top of the plutonic bedrock. The top of the hard rock unit at the Quarry Site is the top of plutonic bedrock. Therefore, the hard rock unit and the groundwater within it are not

a part of the North Kings GSA area groundwater basin and are not addressed by the Groundwater Sustainability Plan. As a result, the use of groundwater at the Quarry Site would not have the potential to substantially impede the sustainable groundwater management of the North Kings subbasin.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.10-12: Substantially Decrease Groundwater Levels in a Manner that Would Result in the Flow of Substantial Volumes of Water from the San Joaquin River to the Quarry Site

As described in Section 4.10.1.8, above, dewatering requirements in the quarry and changes in groundwater levels at the Quarry Site are based on: rainfall (approximately 315 acre-feet per year); water from the existing recharge ditches (approximately 145 acre-feet per year); and groundwater inflow from offsite (approximately 175 acre-feet per year) (KDSA 2021). Increases in the San Joaquin River stage of three to six feet may increase the groundwater level in the band of alluvium between the river and the existing quarry by six inches up to three feet for periods of a few weeks to a month. The duration and magnitude of groundwater level changes due to local rainfall persists for a longer period of time and results in overall greater changes in the groundwater level. While changes in San Joaquin River stage can also affect groundwater levels in the weathered rock and hard rock, the effect is small and does not occur uniformly across the Quarry Site. Overall, local rainfall has a greater effect on groundwater levels than do changes in river stage.

The base flows within the San Joaquin River are typically at or below the elevation of the base of the alluvium on the Quarry Site. Thus, flows from the San Joaquin River toward the Quarry Site within the alluvium can only occur during the infrequent and relatively short-term high flow periods. Due to the recharge trenches along the west side of the Quarry Site, groundwater levels in the alluvium and the weathered rock would be maintained consistent with existing conditions. As a result, there would be no significant change in the volume of potential inflow from the river into the quarry during high flow events through the alluvium and weathered rock as a result of the project.

The current rate of groundwater inflow into the quarry at the Quarry Site is 175 acre-feet per year, which includes inflow through the alluvium, weathered rock, and hard rock (KDSA 2021). During active mining as part of the project, groundwater inflow into the quarry is expected to increase to 195 acre-feet per year and be as high as 255 acre-feet per year once the Quarry Site has been reclaimed (KDSA 2021). Because there would be no significant change in the volume of potential inflow into the quarry through the alluvium

and weathered rock, as discussed above, the increased rate of groundwater inflow into the quarry as a result of the project would occur solely through the hard rock. During active mining and after reclamation, the water level in the hard rock at the Quarry Site would be appreciably lower than it is currently. The increased rate of groundwater inflow through the hard rock into the quarry would be caused by an increase in the hydraulic gradient, or slope of the groundwater surface, toward the quarry. This increased hydraulic gradient would occur exclusively within the hard rock because water levels in the alluvium and weathered rock would be maintained by the recharge trenches and the Northeast Pond during mining. Since the hard rock is not in direct contact with the channel or bed of the San Joaquin River, the only way that the lower groundwater levels in the hard rock could draw water from the river is if that water percolated downward through the alluvium and/or weathered rock. As discussed above, the hydraulic conditions are such that there would be no significant change in the volume of water flowing from the river through the alluvium and weathered rock as a result of the project.

However, if pumping to the recharge trenches ceases once mining is completed, then additional flow from the river into the quarry pit could potentially occur if the drawdown in alluvium or weathered rock increases. This would be a potentially significant impact.

Implementation of the adaptive management strategy in Mitigation Measure 4.10-10a, above. would address potential impacts to flows in the San Joaquin River after mining is completed and pumping to the recharge trenches ceases. The adaptive management strategy includes monitoring, comparison of monitoring results with action levels, and implementation of corrective measures if the action levels are exceeded. To ensure funding and implementation of the adaptive management program, Mitigation Measure 4.10-10b requires the establishment of a funding mechanism for monitoring, implementation of the adaptive management program, and corrective actions, if needed.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures: *Implement Mitigation Measures 4.10-10a and 4.10-10b.*

Level of Significance After Mitigation: Less than significant.

Impact 4.10-13: Interfere Substantially with Groundwater Recharge at the Plant Site and Quarry Site such that the Project May Impede Sustainable Groundwater Management of the Basin

The addition of impervious surfaces in areas that are critical to groundwater recharge has the potential to substantially reduce groundwater recharge within a basin. The proposed project would not substantially alter the existing facilities and infrastructure on the Plant

Site. Thus, impervious surfaces would not be added to the site. Upon completion of final reclamation activities at the Plant Site, the existing facilities and most infrastructure, with the exception of perimeter roads for access, would be removed. Therefore, the proposed mining and reclamation of the Plant Site would not have the potential to interfere substantially with groundwater recharge. This impact would be less than significant.

The proposed project would add a 42-acre "plant site" at the Quarry Site (see Figure 2-9). The plant site would contain impervious surfaces. However, the primary sources of groundwater recharge on the Quarry Site runoff are rainfall and direct rainfall on water (approximately 315 acre-feet per year); water from the existing recharge ditches (approximately 145 acre-feet per year); and groundwater inflow from offsite (approximately 175 acre-feet per year; includes Little Dry Creek seepage) (KDSA 2021). Development of the "plant site" would not interfere with these sources of groundwater recharge and the proposed project would develop additional groundwater recharge trenches on the site. In addition, the alluvium at the Quarry Site has already been removed from the proposed plant site. Therefore, the plant site would be placed on top of the weathered rock or hard rock. As stated in the "Regional Groundwater Conditions" subsection of Section 4.10.1.6, above, the North Kings GSA area GSP defines the vertical extent of the eastern one-quarter of the North Kings GSA aquifer system, where the Plant Site and Quarry Site are located, as the top of the plutonic bedrock. The top of the hard rock unit at the Quarry Site is the top of plutonic bedrock. Therefore, the hard rock unit and the groundwater within it are not a part North Kings GSA area groundwater basin and are not addressed by the GSP. As a result, the use of groundwater at the Quarry Site would not have the potential to substantially impede the sustainable groundwater management of the North Kings subbasin. Furthermore, the "plant site" at the Quarry Site would be temporary, and these facilities would be removed entirely during Phase 5 of the proposed project to accommodate mining of the area, and a portable plant would be brought in to complete the final processing.

Therefore, the addition of impervious surfaces to the Quarry Site through the development of a "plant site" would not substantially interfere with groundwater recharge. This impact would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.10-14: Alter Drainage Patterns in a Manner Which Would Result in Substantial Erosion or Siltation On or Off Site

As described in the Surface Runoff and Drainage Plan (Appendix G-2), under the proposed project, stormwater runoff would be contained within each project site by existing berms. Furthermore, the proposed project mining operations and reclamation activities would not alter the course of either the San Joaquin River or Little Dry Creek. As described in the "Erosion and Sedimentation" subsection of Section 4.10.1.5, above, results of the Hydraulic Analysis indicate that the 100-year flow velocities along the Quarry Site river bank under existing conditions are generally at or below the 6 fps "permissible velocity" below which the natural channel will resist erosion, at all cross-sections shown in Figure 4.10-1 except at cross-sections 8, 15, and 16. The proposed SMRP would maintain the existing 200-foot setback from the river edge at the Quarry Site and would not disturb the easterly channel bank along the Quarry Site (nor any other portions of the channel). There were no areas along the Plant Site identified as potentially exceeding the permissible velocity. Therefore, the proposed project would not have the potential to increase erosion by altering existing river velocities. Although the proposed project would not have the potential to increase erosion of the easterly channel bank along the Quarry Site, the Operator would continue its program of BMPs by monitoring the easterly channel bank of the Quarry Site for evidence of erosion following large storm events for the duration of Phase 1 and 2 operations. If any significant erosion is apparent, the Operator would coordinate with appropriate permitting agencies to determine if repair measures to the bank are necessary. For these reasons, the proposed SMRP would not have the potential to alter drainage patterns on either the Plant Site or Quarry Site in a manner which could result in substantial erosion or siltation offsite.

With regard to on-site conditions, the drainage patterns within the Plant Site and Quarry Site would be changed by the mining and reclamation, but on-site storm runoff, wash water, and sediment would be retained within the reclaimed pits and managed in accordance with all applicable stormwater management requirements under the NPDES program, including the site-specific SWPPP prepared in accordance with Industrial General Permit Requirements and updated WDRs. In addition, all internal drainage structures, conveyance features, and surface runoff controls would be constructed in accordance with SMARA (14 CCR 3706(d). Upon completion of reclamation, there would be no off-site run-on into the Plant Site or Quarry Site. Stormwater runoff would sheet flow down the pit slopes and into the open water of the pit. Proposed project conditions would be identical to baseline conditions. Therefore, the proposed project would have no impact.

Level of Significance: No impact.

Mitigation Measure: None required.

Impact 4.10-15: Alter Drainage Patterns in a Manner Which Would Result in On or Off-Site Flooding or Exceed the Capacity of the Existing Storm Drainage System

As described in the Surface Runoff and Drainage Plan (Appendix G-2), under the proposed project, stormwater runoff would be contained within each project site by existing berms. The project sites do not drain to an existing storm drainage system. Furthermore, the proposed project mining operations and reclamation activities would not alter the course of either the San Joaquin River or Little Dry Creek. Therefore, the proposed project would not substantially alter drainage patterns in a manner which would result in offsite flooding or exceed the capacity of the existing storm drainage system.

With regard to onsite conditions, the stormwater on both sites would be managed in accordance with all applicable stormwater management requirements under the NPDES program, including the site-specific SWPPP prepared in accordance with Industrial General Permit Requirements and updated WDRs. In addition, all internal drainage structures, conveyance features, and surface runoff controls would be constructed in accordance with SMARA (14 CCR 3706(d). Furthermore, all stormwater on the project sites would ultimately be retained in the quarry pits excavated during mining operations and which would form quarry pit lakes upon the completion of reclamation, consistent with existing conditions at both the Plant Site and the Quarry Site. Therefore, the proposed project would have no impact.

Level of Significance: No impact.

Mitigation Measure: None required.

Impact 4.10-16: Alter Drainage Patterns in a Manner Which Would Impede or Redirect Flood Flows

As described in Section 4.10.1.4, above, the Hydraulic Analysis (Appendix G-1) shows that the San Joaquin River floodplain does not enter into the Quarry Site and therefore the river would not overtop its banks and flow into the quarry. Consequently, the proposed mining and reclamation of the Quarry Site would not impede or redirect flood flows. The analysis also concludes that the San Joaquin River floodplain does not enter into the Plant Site, and existing topography and berms along the north edge of the Plant Site prevent the Little Dry Creek floodplain from entering the Plant Site, with the exception of a small portion of the northwest corner of the Plant Site (as shown in Figure

4.10-1). This portion of the Plant Site is currently used as a stockpile area, and this use would continue during Phase 1 mining operations. Upon completion of Phase 1 mining, the stockpiles would be removed, and the area would be graded to drain to the reclaimed pond to the east, as it does under existing conditions, which would improve conditions relative to flood flows. The stockpile area would then be revegetated. Although minor changes to the drainage patterns of the portion of the Plant Site in the Little Dry Creek floodplain would occur under the proposed project, ultimately, the area would drain towards the reclaimed Plant Site mining excavation, similar to existing conditions, and flood flows would not be impeded or redirected. Removing the stockpiles would improve conditions relative to flood flows. Thus, the proposed project would benefit site conditions and there would be no impact.

Level of Significance: No impact.

Mitigation Measure: None required.

Impact 4.10-17: Release of Pollutants in Flood Hazard, Tsunami, or Seiche Zones Due to Project Inundation

As described in Section 4.10.1.4, above, the Hydraulic Analysis (Appendix G-1) shows that the San Joaquin River floodplain does not enter into the Quarry Site. As described in the "Erosion and Sedimentation" subsection of Section 4.10.1.5, above, results of the Hydraulic Analysis indicate that the 100-year flow velocities along the Quarry Site San Joaquin River bank under existing conditions are generally at or below the 6 fps "permissible velocity" below which the natural channel will resist erosion, at all cross-sections shown in Figure 4.10-1 except at cross-sections 8, 15, and 16. Therefore, the proposed project, which proposes conditions equal to or better than those under existing conditions with respect to the flood hazard zone (i.e., 100 year floodplain) would not have the potential to increase the release of sediment by altering existing river velocities. The analysis also concludes that the San Joaquin River floodplain does not enter into the Plant Site, and existing topography and berms along the north edge of the Plant Site prevent the Little Dry Creek floodplain from entering the Plant Site, with the exception of a small portion of the northwest corner of the Plant Site (as shown in Figure 4.10-1). This portion of the Plant Site is currently used as a stockpile area, and this use would continue during Phase 1 mining operations. Upon completion of Phase 1 mining, the stockpiles would be removed, and the area would be graded to drain to the reclaimed pond to the east, as it does under existing conditions. The area would then be revegetated. Because the existing land use of this portion of the Plant Site would not change during Phase 1 mining operations and does not involve the use of hazardous materials, and because this area would be graded and revegetated upon the completion of mining, the potential of the

proposed project to substantially increase the risk of the release pollutants in the event of flooding would be less than significant.

The project sites are located downstream of Friant Dam, a concrete dam that forms the Millerton Lake reservoir. During unforeseen events, the release of water into the San Joaquin River at rates that could exceed the river channel capacity could be required (Fresno County 2018a). This in turn could result in flooding of the Quarry Site and/or Plant Site. During such an event, sediment could be generated due to erosion at both the Quarry Site and Plant Site, but that sediment would be generated with and without the project. However, the resulting inundation due to the unforeseen events would occur far outside the actual flood hazard zones, and thus would not be covered by this impact. In addition, the unforeseen event of the release of water from the Friant Dam or Millerton Lake Reservoir is not required to be addressed under CEQA since the releases are not "reasonably foreseeable." The enlarged mining excavation could help contain and minimize downstream flooding, which would reduce the overall potential for release of pollutants, including sediment. In addition, hazardous materials on both sites would be stored in accordance with the requirements of the Industrial General Permit SWPPP and SPCC Plan. This would minimize the risk of the release of pollutants in the event of site inundation. Upon completion of reclamation, both project sites would contain open space/open water land uses, which would not be sources of pollutants and would not store hazardous materials. Therefore, the potential of inundation of the project sites due to a rapid release of water from Friant Dam to result in the release of pollutants would be less than significant.

During mining operations, the quarry pits on the Plant Site and Quarry Site would generally be dewatered. After the completion of mining operations, quarry pit lakes would form. The lake surfaces would be approximately 20 feet bgs at the Plant Site and 500 feet bgs at the Quarry Site. Any seiches that could occur in these lakes would be unlikely to be sufficient in size to overtop the quarry pit highwalls. Furthermore, the surrounding areas would be reclaimed to open space and therefore water from seiches would not have the potential to come into contact with any substantial potential sources of pollutants. This impact would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

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4.11—LAND USE AND PLANNING

This section of the EIR describes the existing land uses, adopted general plan land use classifications and zoning designations on and around the Plant Site and Quarry Site, and other applicable management plans and policies pertinent to the project areas. This section also describes the applicable plans and policies that guide development on the Plant Site and Quarry Site, and it evaluates the project's consistency with these plans and policies and other existing land use regulations.

This section also identifies any potentially significant land use impacts and, if necessary, appropriate mitigation measures to avoid or reduce such impacts. Pursuant to Section 15358(b) of the CEQA Guidelines, mitigation measures are proposed only to address physical impacts that may result from the project.

4.11.1 Environmental Setting

The following discussion provides a description of existing land uses, general plan designations, zoning classifications, and mineral resource designations for the Plant Site and Quarry Site. Land uses for adjacent properties are also discussed.

4.11.1.1 Land Uses

Plant Site

The existing land uses on the Plant Site consist of aggregate mining and processing and production facilities, as shown in Figure 2-3, "Plant Site Existing Conditions," in Chapter 2, "Project Description," of this Draft EIR. At the center of the Plant Site is the Rockfield Quarry gravel mining plant including its supporting equipment and buildings, a scale house/office/quality control lab, and an aggregate maintenance shop. A ready-mix maintenance shop is located near the site entrance. Storage buildings, a mixer truck maintenance shop, a batch office, and a ready-mix concrete plant, including supporting equipment, are located in the northwest portion of the site. The Plant Site also contains an inactive, diesel-powered asphalt plant; various large stockpiles; perimeter berms; and approximately 36 acres of silt ponds located throughout the site (see Section 2.5.2.1, "Plant Site Mine Plans," of Chapter 2, of this Draft EIR). A diesel-powered, portable recycle plant is brought in periodically to recycle return concrete. A PG&E easement is located along the eastern edge of the Plant Site, adjacent to North Friant Road. A PG&E easement also crosses the northern portion of the Plant Site from east to west. These rights-of-way are shown in Figure 2-3.

Quarry Site

The existing land uses on the Quarry Site consist of aggregate mining as shown in Figure 2-4, "Quarry Site Existing Conditions," in Chapter 2, of this Draft EIR. The Quarry Site currently does not contain any processing or production facilities. Screening berms are located along North Friant Road and along the southwest boundary. Vegetated topsoil stockpiles located in various places along the western perimeter provides additional screening. Various internal haul roads run throughout the Quarry Site. A Ponderosa Telephone Company telephone line and PG&E easement run along North Friant Road adjacent to the eastern boundary of the Quarry Site. A San Joaquin Light and Power Company easement is in the southern half of the Quarry Site. These rights-of-way are shown in Figure 2-4.

4.11.1.2 Surrounding Land Uses

Plant Site

Existing land uses surrounding the project sites are shown in Figure 2-5, "Conditional Use Permits and Surrounding Land Uses," in Chapter 2, of this Draft EIR. The Plant Site is bounded on the north, west, and south by lands that were once part of the former Ball Ranch, most of which was previously mined for aggregate.

The property immediately north, west, and south of the Plant Site is now part of the Willow Unit Ecological Reserve, owned by California Department of Fish and Wildlife (CDFW). There are several 20-acre farming parcels and other farmland south of the CDFW property. Most of the property north of the Plant Site and generally north of Little Dry Creek is now the Ball Ranch Nature Reserve, owned by the San Joaquin River Conservancy. Land east of North Friant Road near the Plant Site is primarily open grazing land with several 8 to 10-acre rural residential homesites to the southeast.

The San Joaquin River is located approximately 0.5 miles west of the Plant Site. Little Dry Creek, a tributary of the San Joaquin River, is located approximately 500 feet north of the Plant Site.

Quarry Site

Lost Lake County Park is located northwest of the Quarry Site. Land immediately east of Lost Lake County Park, and north of the Quarry Site, was previously mined for aggregate and has been reclaimed as open space, ponds, and riparian habitat. This area is now the Beck Ranch Natural Reserve, owned by the San Joaquin River Conservancy. The property east of Beck Ranch, west of North Friant Road, and north of the northeast portion of the Quarry Site was previously mined for aggregate and reclaimed as farmland, open space, ponds, and riparian habitat. A rural residence is located on this property.

The San Joaquin River flows along the west side of the Quarry Site. Across the river to the west in Madera County, there is farmland to the northwest and a private, gated residential community to the west. The Ledger Island Natural Reserve, land previously mined for aggregate and now owned by the San Joaquin River Conservancy, is located across the river to the southwest of the Quarry Site.

A residence, farmland, and a winery/farmers market are located to the south of the Quarry Site. East of North Friant Road there is a residential community to the northeast overlooking the Quarry Site. A private, gated residential community is located at the base of the foothills southeast of the entrance road to the Quarry Site. Between these two communities, located east of the northeast corner of the Quarry Site, is a rural residence. The remaining area to the east consists of open grazing land.

4.11.1.3 General Plan Designations

The *Fresno County General Plan* (Fresno County 2024) designates the land use for the project sites as Agriculture. The recovery of mineral resources has been ongoing at the project sites for over 100 years (1913-present) and the continued recovery of mineral resources from lands designated Agriculture are allowed under the Fresno County General Plan Policy LU-A.4. Uses that are allowed in the Agriculture designation include special agricultural uses and agriculture-related activities, including value-added processing facilities, and certain non-agricultural uses listed in Table LU-3 of the general plan. The project sites also fall within the San Joaquin River Corridor Overlay, as shown in Figure LU-2 of the General Plan. The Quarry Site is located adjacent to the southern boundary of the Friant Community Plan Area.

4.11.1.4 Zoning Classifications

Both the Quarry Site and Plant Site are zoned "AE-20" Exclusive Agriculture, 20-acre minimum parcel size. Surface mining operations and related facilities and activities are permitted in the AE-20 district subject to a CUP under the provisions of Section 858 of the Fresno County Zoning Ordinance.

4.11.1.5 Mineral Resource Designations

An objective of the Surface Mining and Reclamation Act (SMARA) is to create a mineral lands inventory by designating certain areas of California as being important for the production and conservation of existing and future supplies of mineral resources. Pursuant to Section 2790 of SMARA, the State Mining and Geology Board has designated certain mineral resource areas to be of regional significance.

In 1986, the State of California classified the aggregate resources in the San Joaquin River area within which the Plant Site and Quarry Site are located as MRZ-2 (Mineral Land

Classification: Aggregate Materials in the Fresno Production-Consumption Region, Special Report 158, DOC and DMG, 1986). Fresno County incorporated the MRZ-2 classification into the Mineral Resources Unit of the Open Space/Conservation Element of the General Plan in 1987. This designation indicates that a high likelihood exists that significant aggregate deposits are present.

In 1988, the State included both the Plant Site and Quarry Site as part of the lands designated as having construction grade aggregate deposits that are of regional significance (Designation of Regionally Significant Construction Aggregate Resources in the Fresno Production Consumption Region, SMARA Designation Report #8, DOC and DMG, July 1988). SMARA requires that a lead agency's land use decisions involving the designated area be made in accordance with its mineral resource management policies, and that the lead agency consider the importance of the mineral resource to the region as a whole and not just the lead agency's area of jurisdiction.

4.11.2 Regulatory Setting

The Plant Site and Quarry Site are in unincorporated Fresno County, where the *Fresno County General Plan* serves as the applicable general plan document. This document provides overall land use policy direction, and the Fresno County Ordinance Code provides the applicable land use regulations.

Applicable county planning policies and zoning regulations that pertain to the Rockfield Quarry are described below, followed by a discussion of the project's consistency or inconsistency with each relevant policy. Potential conflicts with planning policies as contained in the *Fresno County General Plan* and other applicable regulatory and management plans do not inherently result in a significant effect on the environment. Instead, "effects analyzed under CEQA must be related to a physical change in the environment" (CEQA Guidelines Section 15358[b]). CEQA Guidelines Section 15125[d] provides that an EIR shall discuss any inconsistencies between a proposed project and the applicable general plan in the setting section of the document rather than as an impact (see Table 4.11-1, "Project Consistency with Local Planning Documents," at the end of this "Regulatory Setting" section). Appendix G of the CEQA Guidelines indicates that a project would result in a significant impact related to land use and plans if it would "conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect." Therefore, while this section of the EIR provides an analysis of the project's consistency with applicable plans, policies, and regulations, any impacts that may result from such conflicts are analyzed elsewhere in this EIR.

4.11.2.1 Fresno County General Plan

The Plant Site and Quarry Site are in an unincorporated area of Fresno County and, as such, the proposed project is subject to the land use regulations and planning policies promulgated in the *Fresno County General Plan*, adopted by the Board of Supervisors on February 20, 2024. The *Fresno County General Plan* includes the definition and designation of various land use categories, with corresponding allowable uses, intensities, and densities.

Land Use Element

The Fresno County General Plan (Fresno County 2024) designates the allowable land use for the project sites as Agriculture. The recovery of mineral resources has been ongoing at the project sites for over 100 years (1913-present) and the continued recovery of mineral resources from lands designated Agriculture are allowed under the Fresno County General Plan Policy LU-A.4. Uses that are allowed in the Agriculture designation include special agricultural uses and agriculture-related activities, including value-added processing facilities, and certain non-agricultural uses listed in Table LU-3 of the General Plan. The project sites also fall within the San Joaquin River Corridor Overlay, as shown in Figure LU-2 of the General Plan. The Quarry Site is located adjacent to the southern boundary of the Friant Community Plan Area. The following policies from the *Fresno County General Plan* related to land use and planning apply to the proposed project.

Agriculture and Land Use Element

Section A. Agriculture

Goal LU-A: To promote the long-term conservation of productive and potentially-productive agricultural lands and to accommodate agricultural-support services and agriculturally-related activities that support the viability of agriculture and further the County's economic development goals.

Policy LU-A.4: The County shall require that the recovery of mineral resources and the exploration and extraction of oil and natural gas in areas designated Agriculture comply with the Mineral Resources Section of the Open Space and Conservation Element. (See Section OS-G)

Policy LU-A.13: The County shall protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations. Additionally, the County shall consider buffers between agricultural uses and proposed sensitive receptors when processing discretionary land use applications.

Policy LU-A.14: The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.

Section C. River Influence Areas

Goal LU-C: To preserve and enhance the value of the river environment as a multiple use, open space resource; maintain the environmental and aesthetic qualities of the area; protect the quality and quantity of the surface and groundwater resources; provide for long term preservation of productive agricultural land; conserve and enhance natural wildlife habitat; and maintain the flood-carrying capacity of the channel at a level equal to the one (1) percent flood event (100-year flood).

Policy LU-C.2: Within the San Joaquin River Corridor Overlay, the County shall accommodate agricultural activities with incidental homesites, recreational uses, sand and gravel extraction, and wildlife habitat and open space areas. (See Figure LU-2).

Policy LU-C.5: The County may allow the extraction of rock, sand, and gravel resources along the San Joaquin River consistent with the Minerals Resources section policies of the Open Space and Conservation Element.

Policy LU-C.7: Fresno County shall take into consideration the presence of the regulatory floodway or other designated floodway, the FEMA-designated 100-year floodplain, estimated 250-year floodplain, the Standard Project Flood, and the FMFCD Riverine Floodplain Policy in determining the location of future development within the San Joaquin River Parkway area. Any development sited in a designated 100-year floodplain shall comply with regulatory requirements at a minimum and with the FMFCD Riverine Floodplain Policy criteria, or requirements of other agencies having jurisdiction, where applicable.

Policy LU-C.8: The County shall administer its land use regulations in the San Joaquin River Corridor Overlay to preserve and protect identified wildlife corridors along the San Joaquin River. The County shall administer these regulations in consultation with the San Joaquin River Conservancy.

Policy LU-C.9: The County shall administer its land use regulations in the San Joaquin River Corridor Overlay to protect natural reserve areas in the San Joaquin River Parkway, principally in those areas adjoining the wildlife corridor along the river where the largest acreage's of highest quality

habitat exist. The County shall administer these regulations in consultation with the San Joaquin River Conservancy.

Section F. Urban Development Patterns

Goal LU-F: To encourage mixed-use pedestrian and transit-oriented development and to establish development standards for residential, commercial, and industrial development in urban and urbanizing areas.

Policy LU-F.30: The County may approve rezoning requests and discretionary permits for new industrial development or expansion of existing industrial uses subject to conditions concerning the following criteria or other conditions adopted by the Board of Supervisors:

a) Operational measures or specialized equipment to protect public health, safety, and welfare, and to reduce adverse impacts of noise, odor, vibration, smoke, noxious gases, heat and glare, dust and dirt, combustibles, and other pollutants on abutting properties.

b) Provisions for adequate off-street parking to handle maximum number of company vehicles, salespersons, and customers/visitors.

c) Mandatory maintenance of non-objectionable use areas adjacent to or surrounding the use in order to isolate the use from abutting properties.

d) Limitations on the industry's size, time of operation, or length of permit.

e) Compliance with the Environmental Justice Element policies for proposals in proximity to sensitive receptors and/or disadvantaged communities.

Policy LU-F.31: The County shall generally require community sewer and water services for industrial development. Such services shall be provided in accordance with the provisions of the Fresno County Ordinance, or as determined by the State Water Quality Control Board.

Policy LU-F.32: The County shall require that all industrial uses located adjacent to planned non-industrial areas or roads carrying significant non-industrial traffic be designed with landscaping and setbacks comparable to the non-industrial area. Compliance with the Environmental Justice Element policies for proposals in proximity to sensitive receptors and/or disadvantaged communities. Related policies include EJ-A.1, EJ-A.2, EJ-A.3, EJ-A.8, EJ-A.12, EJ-A.13, EJ-A.14, AND EJ-A.15.

Policy LU-F.33: Since access to industrial areas by way of local roads not designed for industrial traffic is generally inappropriate, the County may

require facility design, traffic control devices, and appropriate road closures to eliminate this problem.

4.11.2.2 Madera County General Plan

Although the project sites are located completely within and are under the jurisdiction of Fresno County, Madera County is located across the San Joaquin River to the west of the project sites (see Figure 1-2, "Site Location," in Chapter 1, "Introduction," of this Draft EIR). The *Madera County General Plan* (Madera County 1995) Land Use (Section 1) and Agricultural and Natural Resources (Section 5) Elements have a number of policies related to land use and planning. These policies are listed below.

Land Use Element

Agricultural and Natural Resources Element

Sub-Section I. Mineral Resources

Goal 5.I: To encourage commercial mining operations within areas designated for such extraction, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated, and to provide for the timely rehabilitation and appropriate reuse of mining sites.

Policy 5.I.1: The County shall require new mining operations to be designed to provide a buffer between existing or likely adjacent uses, minimize incompatibility with nearby uses, and adequately mitigate their environmental and aesthetic impacts. The buffer area shall be zoned Agricultural, Rural, Exclusive-20 Acre or -40 Acre (ARE-20 and ARE-40)

Policy 5.I.5: The County shall coordinate its mineral extraction policies and regulations with Fresno County, the City of Fresno, and Merced County. The County shall refer applications for mining operations in locations near or adjacent to a city or another county to the affected city or county for review and comment.

Policy 5.I.6: The County shall require that all mining operations prepare and implement mining plans and reclamation plans that mitigate environmental impacts and incorporate adequate security to guarantee proposed reclamation.

4.11.2.3 Zoning Ordinance of Fresno County—Land Use and Planning

The Zoning Ordinance of Fresno County—Land Use and Planning, last amended June 2018, establishes land use districts and regulations within the unincorporated areas of the county, outlines the use permit process, establishes regulations for various special land uses, and describes administrative procedures.

Both the Quarry Site and Plant Site are zoned "AE-20" Exclusive Agriculture, 20-acre minimum parcel size. Surface mining operations and related facilities and activities are permitted in the AE-20 district subject to a CUP under the provisions of Section 858 of the Fresno County Zoning Ordinance.

Section 858—Regulations for Surface Mining and Reclamation in All Districts

This section of the Fresno County Zoning Ordinance outlines the County's regulations on surface mining and reclamation operations, consistent with the California Surface Mining and Reclamation Act of 1975 (Public Resources Code Section 2710 et seq.). The section establishes the importance of mineral resources to the County as community assets while acknowledging the need to protect surrounding uses from potential land use conflicts and adverse environmental effects and to reclaim mining sites to a usable condition. Specifically, this section requires approval of a CUP, Mining and Reclamation Plan, and Financial Assurances for all surface mining operations in the County and outlines the submission requirements and processing procedures for each. This section also establishes standards for surface mining operations and reclamation including requirements for annual inspections and reporting.

4.11.2.4 Existing Land Use Permits

The Plant Site currently operates under CUPs 367, 2209, 3063, and 3093. The CUPs allow aggregate mining of the alluvial deposit; plant operations including an aggregate processing plant, a ready-mix concrete plant, a hot-mix asphalt plant (inactive since 2009), and related supportive facilities; and the processing of raw aggregate mined from the applicant's current Quarry Site.

The Quarry Site currently operates under CUPs 367, 2032, 3063, and 3093. Since there are no plant operations permitted at the Quarry Site, the CUPs allow the interplant haul of approximately 1.4 million tons per year (MT/year) of raw aggregate via North Friant Road approximately 2 miles south to the Plant Site for processing.

4.11.2.5 Project Consistency with Local Planning Documents

See Table 4.11-1, "Project Consistency with Local Planning Documents," below for an analysis of relevant policies and their consistency with the proposed project.

Table 4.11-1
Project Consistency with Local Planning Documents

Goals/Objectives/Policies	Consistency Analysis
FRESNO COUNTY GENERAL PLAN: AGRICULTURAL & LAND USE ELEMENT	
SECTION A. AGRICULTURE	
Goal LU-A: To promote the long-term conservation of productive and potentially- productive agricultural lands and to accommodate agricultural-support services and agriculturally-related activities that support the viability of agriculture and further the County's economic development goals.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy LU-A.2: The County shall allow by right in areas designated Agriculture activities related to the production of food and fiber and support uses incidental and secondary to the on-site agricultural operation. Uses listed in Table LU-1 are illustrative of the range of uses allowed in areas designated Agriculture.	**Consistent:** According to Fresno County General Plan Table LU-1, mineral extraction is an allowed use in areas designated Agriculture, pursuant to the policies in the Open Space and Conservation Element.
Policy LU-A.3: The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally related activities, including value added processing facilities, and certain non-agricultural uses listed in Table LU-1. Approval of these and similar uses in areas designated Agriculture shall be subject to the following criteria: a) The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics; b) The use should not be sited on productive agricultural lands if less productive land is available in the vicinity; c) The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius; d) A probable workforce should be located nearby or be readily available; e) For proposed agricultural commercial center uses the following additional criteria shall apply: 1) Commercial uses should be clustered in centers instead of single uses.	**Consistent:** Mineral extraction is an allowed use per Fresno County General Plan Table LU-1 and would meet the criteria outlined in this policy. a) The proposed use provides a needed service to the surrounding area by producing cement products for roads and other construction projects. b) As an existing commercial use, the proposed project is excluded from this policy provision per subsection (h) below. c) See Section 4.10, "Hydrology and Water Quality." With implementation of mitigation measures, the project would have less-than-significant impacts on water quality, groundwater supplies and recharge, and drainage patterns. However, as it cannot be said with certainty at this time that access would be granted to County and private residential supply wells to allow for the full implementation of Mitigation Measure 4.10-11a, the County has determined that the proposed project's potential impact on groundwater supply wells surrounding the Quarry Site would be significant and unavoidable. d) See Impact 4.14-1. The project would require the addition of five new workers which would likely be hired from the surrounding communities. e) The project is not an agricultural commercial center.

Goals/Objectives/Policies	Consistency Analysis
2) To minimize proliferation of commercial centers and overlapping of trade areas, commercial centers shall be located a minimum of two (2) miles from a city sphere of influence and four (4) miles from any existing or approved agricultural or rural residential commercial center or designated commercial area. 3) New commercial uses should be located within or adjacent to existing centers. 4) Sites should be located on a major road serving the surrounding area. 5) Commercial centers should not encompass more than one-quarter (1/4) mile of road frontage, or one-eighth (1/8) mile if both sides of the road are involved, and should not provide potential for developments exceeding ten (10) separate business activities, exclusive of caretakers' residences; f) For proposed value-added agricultural processing facilities, the evaluation under criteria "a" above, shall consider the service requirements of the use and the capability and capacity of cities and unincorporated communities to provide the required services; and g) For proposed churches and schools, the evaluation under criteria LU-A.3a above shall include consideration of the size of the facility. Such facilities should be no larger than needed to serve the surrounding agricultural community. h) When approving a discretionary permit for an existing commercial use, the criteria listed above shall apply except for LU-A.3b, e2, e4, and e5	f) Per Fresno County General Plan Table LU-1, the proposed use is not a value-added agricultural processing facility. g) The proposed use is not a church or school. h) The proposed use is an existing commercial use and is consistent with the applicable criteria outlined in this policy.
Policy LU-A.4: The County shall require that the recovery of mineral resources and the exploration and extraction of oil and natural gas in areas designated Agriculture comply with the Mineral Resources Section of the Open Space and Conservation Element. (See Section OS-G)	**Consistent:** As discussed in this table, the proposed project would be consistent with the policies of the Mineral Resources Section of the Open Space and Conservation Element.
Policy LU-A.6: The County shall maintain twenty (20) acres as the minimum permitted parcel size in areas designated Agriculture, except as provided in Policies LU-A.9, LUA. 10, and LU-A.11. The County may require parcel sizes larger than twenty (20) acres based on zoning, local agricultural conditions, and to help ensure the viability of agricultural operations.	**Not Applicable:** The project does not propose any land divisions or changes to parcel size.

Goals/Objectives/Policies	Consistency Analysis
Policy LU-A.11: The County may allow by discretionary permit creation of substandard size lots when such action is deemed necessary by the Board of Supervisors for the recovery of mineral resources and the exploration and extraction of oil and gas in accordance with the policies of Section OS-C, Mineral Resources, of the Open Space and Conservation Element. In no case shall such action result in creation of lots less than five (5) gross acres in size.	**Not Applicable:** The project does not propose any land divisions or changes to parcel size.
Policy LU-A.13: The County shall protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations. Additionally, the County shall consider buffers between agricultural uses and proposed sensitive receptors when processing discretionary land use applications.	**Consistent:** The project is subject to the minimum setback requirements of the existing CUPs as described in Chapter 2, "Project Description." Landscaped screens, berms and fencing are also provided at the project sites along the North Friant Road frontage and some other property boundaries.
Policy LU-A.14: The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.	**Consistent:** Section 4.2, "Agricultural Resources," provides an analysis of the project's potential to convert agricultural land. The project would not, directly or indirectly, convert productive agricultural land and no mitigation is required.
SECTION C. RIVER INFLUENCE AREAS	
Goal LU-C: To preserve and enhance the value of the river environment as a multiple use, open space resource; maintain the environmental and aesthetic qualities of the area; protect the quality and quantity of the surface and groundwater resources; provide for long term preservation of productive agricultural land; conserve and enhance natural wildlife habitat; and maintain the flood-carrying capacity of the channel at a level equal to the one (1) percent flood event (100-year flood).	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy LU-C.2: Within the San Joaquin River Corridor Overlay, the County shall accommodate agricultural activities with incidental homesites, recreational uses, sand and gravel extraction, and wildlife habitat and open space areas. (See Figure LU-2).	**Consistent:** Per Figure LU-2 in the County General Plan, both the Quarry and Plant sites are in the "San Joaquin River Corridor Overlay." Per Policy LU-C.2, sand and gravel extraction is an allowable use within the overlay.
Policy LU-C.5: The County may allow the extraction of rock, sand, and gravel resources along the San Joaquin River consistent with the Minerals Resources section policies of the Open Space and Conservation Element.	**Consistent:** See discussion below specific to the goals and polices within the "Open Space and Conservation" Element (Section V) of the General Plan. Per the discussion below, the project is consistent with this policy.

Goals/Objectives/Policies	Consistency Analysis
Policy LU-C.7: Fresno County shall take into consideration the presence of the regulatory floodway or other designated floodway, the FEMA-designated 100-year floodplain, estimated 250-year floodplain, the Standard Project Flood, and the FMFCD Riverine Floodplain Policy in determining the location of future development within the San Joaquin River Parkway area. Any development sited in a designated 100-year floodplain shall comply with regulatory requirements at a minimum and with the FMFCD Riverine Floodplain Policy criteria, or requirements of other agencies having jurisdiction, where applicable.	**Consistent:** Impact 4.10-11 of Section 4.10, "Hydrology and Water Quality," provides an analysis of flood hazards at the project sites. The Quarry Site and majority of the Plant Site are separated from nearby floodplains by berms. Only the northwest corner of the Plant Site is within the floodplain for Little Dry Creek. This area is used solely for stockpile storage and would continue to be used as such after project implementation. Upon reclamation, these stockpiles would be removed, and the area would be graded to drain to an existing pond. Thus, no development is proposed within a designated 100-year floodplain.
Policy LU-C.8: The County shall administer its land use regulations in the San Joaquin River Corridor Overlay to preserve and protect identified wildlife corridors along the San Joaquin River. The County shall administer these regulations in consultation with the San Joaquin River Conservancy.	**Consistent:** As discussed throughout this section, the proposed project would be consistent with all applicable land use regulations.
Policy LU-C.9: The County shall administer its land use regulations in the San Joaquin River Corridor Overlay to protect natural reserve areas in the San Joaquin River Parkway, principally in those areas adjoining the wildlife corridor along the river where the largest acreages of highest quality habitat exist. The County shall administer these regulations in consultation with the San Joaquin River Conservancy.	**Consistent:** As discussed throughout this section, the proposed project would be consistent with all applicable land use regulations.
FRESNO COUNTY GENERAL PLAN: TRANSPORTATION AND CIRCULATION ELEMENT	
SECTION A. STREETS AND HIGHWAYS	
Goal TR-A: To plan and provide a unified, multi-modal, coordinated, and cost-efficient countywide street and highway system that ensures the safe, orderly, and efficient movement of people and goods, including travel by walking, bicycle, or transit.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy TR-A.3: The County shall plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county. Roadway improvements to increase capacity and maintain LOS standards should be planned and programmed based on consideration of the total overall needs of the roadway system, recognizing the priority of maintenance, rehabilitation, and operation of the existing road system. The County may, in programming capacity-increasing projects, allow exceptions to the level of service	**Consistent:** As discussed in Section 4.17, "Transportation," project impacts would affect LOS and require mitigation measures in accordance with Policies TR-A.5 and TR-A.6, allowing a project to fund a fair share of future improvements to certain intersections and roadways (i.e. signalization, widening, improvements to increase structural section). Once the project has reached 2.65 MT per year, the operator shall conduct annual traffic signal warrant analyses to determine whether traffic signals are warranted at the intersection of Friant Road and the Quarry Site. If the traffic signal warrant analyses

Goals/Objectives/Policies	Consistency Analysis
standards in this policy where it finds that the improvements or other measures required to achieve the LOS policy are unacceptable based on established criteria. In addition to consideration of the total overall needs of the roadway system, the County shall consider the following factors: a) The right-of-way needs and the physical impacts on surrounding properties; b) Construction and right-of-way acquisition costs; c) The number of hours that the roadway would operate at conditions below the standard; d) The ability of the required improvement to significantly reduce delay and improve traffic operations; and e) Environmental impacts upon which the County may base findings to allow an exceedance of the standards. In no case should the County plan for worse than LOS D on rural County roadways, worse than LOS E on urban roadways within the spheres of influence of the cities of Fresno and Clovis, or in cooperation with Caltrans and the Fresno Council of Governments, plan for worse than LOS E on State Routes in the county.	indicate that signals are warranted, and if approved by the agency having jurisdiction over the intersection, the project will be responsible for installing the traffic signals.
Policy TR-A.6: The County shall require dedication of right-of-way or dedication and construction of planned road facilities as a condition of land development and require an analysis of impacts of traffic from all land development projects including impacts from truck traffic. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. The County may allow a project to fund a fair share of improvements that provide significant benefit to others through traffic impact fees.	**Consistent:** See subsection 2.5.8, "Trail Easements," in Chapter 2, "Project Description." The project includes the offer of dedication of a trail easement along North Friant Road adjacent to the Plant Site and offer of dedication of a trail easement along the San Joaquin River at the Quarry Site. The easement would allow for the potential future development of a bicycle and multi-use trail in accordance with existing local transportation planning documents. Section 4.17, "Transportation," provides an analysis of the project's transportation impacts, including impacts from truck traffic. As described under Policy TR-A.2, Project traffic impacts identified in Section 4.17 would require future improvements and mitigation measures in accordance with Policies TR-A.5 allowing a project to fund a fair share portion of future improvements.
Policy TR-A.9: The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system.	**Consistent:** See Impact 4.17-1 of Section 4.17, "Transportation." See discussion under Policies TR-A.2 and 5.

Goals/Objectives/Policies	Consistency Analysis
Policy TR-A.10: The County shall ensure that land development that affects roadway use or operation or requires roadway access to plan, dedicate, and construct required improvements consistent with the criteria in the Circulation Diagram and Standards section of this element.	**Consistent:** See Impact 4.17-1 of Section 4.17, "Transportation." See discussion under Policies TR-A.2, 5, and 7.
FRESNO COUNTY GENERAL PLAN: PUBLIC FACILITIES AND SERVICES ELEMENT	
SECTION A. GENERAL PUBLIC FACILITIES AND SERVICES	
Goal PF-A: To ensure the timely development of public facilities and to maintain an adequate level of service to meet the needs of existing and future development.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy PF-A.2: The County shall ensure through the development review process that public facilities and services will be developed, operational, and available to serve new development. The County shall not approve new development where existing facilities are inadequate unless the applicant can demonstrate that all necessary public facilities will be installed or adequately financed and maintained (through fees or other means).	**Consistent:** Section 4.15, "Public Services," and Section 4.19, "Utilities and Service Systems," provide analyses of the proposed project's impacts on public facilities and utility systems. As discussed in these sections, the project would not increase demand for public services or require new or expanded public facilities. Further, the project would tie into existing utility lines present along North Friant Road and would not require new or expanded utilities.
Policy PF-A.3: The County shall require new industrial development to be served by community sewer, stormwater, and water systems where such systems are available or can feasibly be provided.	**Consistent:** Community sewer, stormwater, and water systems are not available at the project sites. Proposed utility systems are described in Chapter 2, "Project Description."
SECTION B. FUNDING	
Goal PF-B: To ensure that adopted facility and service standards are achieved and maintained through the use of equitable funding methods.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy PF-B.1: The County shall require that new development pays its fair share of the cost of developing new facilities and services and upgrading existing public facilities and services. Exceptions may be made when new developments generate significant public benefits (e.g., low-income housing) and when alternative sources of funding can be identified to offset foregone revenues.	**Consistent:** As part of the application review process, County staff would determine any development fees required for the project.
Policy PF-B.3: The County shall require that new development pays the costs of mitigating impacts on existing County facilities to the extent capacity is provided through existing infrastructure networks.	**Consistent:** The project's potential impacts on public facilities are addressed in Section 4.15, "Public Services." The project would have no significant impacts on County or other public facilities and no mitigation is required.
SECTION C. WATER SUPPLY AND DELIVERY	
Goal PF-C: To ensure the availability of an adequate and safe water supply for domestic and agricultural consumption.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.

Goals/Objectives/Policies	Consistency Analysis
Policy PF-C.3: To reduce demand on the county's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.	**Consistent:** The project uses surface water from the San Joaquin River at the Plant Site for plant process water and groundwater from the underlying aquifer for the ready-mix concrete operation and domestic use. Surface water is used by the existing operation to the maximum extent feasible pursuant to the Applicant's river water rights which limit use to industrial purposes in connection with the processing of rock, sand, and gravel. Furthermore, water diverted from the river is recycled and returned to the plant for continued use as process water or to water trucks for dust control.
Policy PF-C.11: The County shall approve new development only if an adequate sustainable water supply to serve such development is demonstrated.	**Consistent:** Impact 4.19-2 of Section 4.19, "Utilities and Service Systems," provides an analysis of the project's estimated water demand, and the availability of sufficient water supplies to serve the project. It was determined that adequate water supplies would be available to serve the proposed project, and the impact would be less than significant.
Policy PF-C.13: The County shall require that water supplies serving new development meet US Environmental Protection Agency and California Department of Public Health and other water quality standards.	**Consistent:** Water used for domestic purposes is supplied at the Plant Site via two onsite groundwater wells and meets all applicable water quality and quantity standards. Water to be used for domestic purposes at the Quarry Site would be supplied from an existing groundwater well that meets all applicable water quality and quantity standards.
Policy PF-C.14: The County shall require that surface water used to serve new development be treated in accordance with the requirements of the California Surface Water Treatment Rule (California Code of Regulations, Title 22, Division 4, Chapter 17).	**Consistent:** Surface water is used at the Plant Site as processing water to wash aggregate and not for domestic purposes. Thus, no treatment prior to use is required.
Policy PF-C.15: If the cumulative effects of more intensive land use proposals are detrimental to the water supplies of surrounding areas, the County shall require approval of the project to be dependent upon adequate mitigation. The County shall require that costs of mitigating such adverse impacts to water supplies be borne proportionately by all parties to the proposal.	**Consistent:** The project's potential impacts to groundwater quality at the project sites and during both the mining and reclamation phases are addressed in Impacts 4.10-4 through 4.10-7 of Section 4.10, "Hydrology and Water Quality." The analyses determined that the project would have a potentially significant impact to groundwater quality at the Plant Site due to the water quality of the pond that would form in the excavation pit after the completion of mining. To address this impact, Mitigation Measure 4.10-5a requires implementation of a Plant Site Pond Adaptive Management Program while Mitigation Measure 4.10-5b requires establishment of a funding mechanism to ensure implementation of the program. The analyses further determined that the project would have a potentially significant impact to groundwater

Goals/Objectives/Policies	Consistency Analysis
	quality at the Quarry Site during mining operations due to blasting operations. To address this impact, Mitigation Measure 4.13-6 requires implementation of the project's Blasting Protocols to avoid the potential contamination of groundwater by explosives. The project's potential impacts to groundwater supplies are addressed in Impacts 4.10-8 through 4.10-13. According to the impact discussion, dewatering of the Quarry Site excavation pit would have the potential to affect the availability of groundwater at surrounding wells. To address this impact, Mitigation Measure 4.10-11a requires the implementation of a Groundwater Adaptive Management Program during mining and after completion of reclamation that includes monitoring and implementation of corrective measures as necessary to prevent impacts to surrounding wells. Mitigation Measure 4.10-11 requires establishment of a funding mechanism to ensure implementation of the program.
Policy PF-C.16: The County shall, prior to consideration of any discretionary project related to land use, require a water supply evaluation be conducted. The evaluation shall include the following: a) A determination that the water supply is adequate to meet the highest demand that could be permitted on the lands in question. If surface water is proposed, it must come from a reliable source and the supply must be made "firm" by water banking or other suitable arrangement. If groundwater is proposed, a hydrogeologic investigation may be required to confirm the availability of water in amounts necessary to meet project demand. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required. b) If use of groundwater is proposed, a hydrogeologic investigation may be required. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required. Should the investigation determine that significant pumping-related physical impacts will extend beyond the boundary of the property in question, those impacts shall be mitigated. c) A determination that the proposed water supply is sustainable or that there is an acceptable plan to achieve sustainability. The plan must be	**Consistent:** Impact 4.19-2 of Section 4.19, "Utilities and Service Systems," provides an evaluation of available water supplies and hydrogeologic investigations for the proposed project consistent with this policy. According to the impact discussion, the excavation of the quarry pit on the Quarry Site would have the potential to affect surrounding wells. Mitigation Measures 4.10-11a and 4.10-11b would address this impact by requiring the implementation of an adaptive management program to prevent impacts to surrounding wells and establishment of a funding mechanism to ensure implementation of the program.

Goals/Objectives/Policies	Consistency Analysis
structured such that it is economically, environmentally, and technically feasible. In addition, its implementation must occur prior to long-term and/or irreversible physical impacts, or significant economic hardship, to surrounding water users.	
Policy PF-C.17: In the case of lands entitled to surface water, the County shall approve only land use-related projects that provide for or participate in effective utilization of the surface water entitlement such as: a. Constructing facilities for the treatment and delivery of surface water to lands in question; b. Developing facilities for groundwater recharge of the surface water entitlement; c. Participating in the activities of a public agency charged with the responsibility for recharge of available water supplies for the beneficial use of the subject lands.	**Consistent:** The project would utilize its existing surface water entitlements to continue to divert San Joaquin River water for aggregate processing at the Plant Site. Further, this water would be recycled for repeated use onsite as well as for groundwater recharge. Lastly, the project would reduce the use of surface water over time. Therefore, the project would effectively utilize its surface water entitlement in accordance with this policy.
Policy PF-C.23: The County shall require that all new development within the County use water conservation technologies, methods, and practices as established by the County.	**Consistent:** The proposed project's existing and proposed water usage is described in Chapter 2, "Project Description." Several practices are used to conserve water where possible. Surface water is used repeatedly as plant process water with 90% of the water recycled. Runoff that collects in the excavation is collected and used for dust control or recharged into the groundwater aquifer. Groundwater is used for domestic purposes. All new fixtures in proposed facilities would be low flow to meet current water conservation standards.
Policy PF-C.24: The County shall encourage the use of reclaimed water where economically, environmentally, and technically feasible.	**Consistent:** The use of a public reclaimed water supply would not be feasible due to the locations of the project sites outside of the urban area where such facilities may be available. However, as described in subsection 2.4.2.1, "Plant Site Existing Conditions [Water Usage]," and subsection 2.4.2.2, "Quarry Site Existing Conditions [Water Usage]," the project recycles plant processing water diverted from the adjacent river, utilizes runoff that collects in onsite pits, and allows water to percolate to recharge the underlying aquifer.

Goals/Objectives/Policies	Consistency Analysis
Policy PF-C.28: The County shall generally not approve land use-related projects that incorporate a man-made lake or pond that will be sustained by the use of groundwater.	**Consistent:** The proposed reclaimed quarry pits on both the Plant Site and Quarry Site would result in the formation of man-made ponds sustained by a combination of rainfall and natural groundwater intrusion. No groundwater would be pumped to supply the quarry pit. It is not feasible to backfill the quarry pit given that the material from the site will have been sold. The impacts to groundwater have been evaluated and feasible mitigation measures have been incorporated into the project to ensure that the project is consistent with this requirement.
SECTION D. WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL	
Goal PF-D: To ensure adequate wastewater collection and treatment and the safe disposal of wastewater.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy PF-D.5: The County shall promote efficient water use and reduced wastewater system demand by: a. Requiring water-conserving design and equipment in new construction; b. Encouraging retrofitting with water-conserving devices; and c. Designing wastewater systems to minimize inflow and infiltration, to the extent economically feasible.	**Consistent:** The proposed project's existing and proposed water usage is described in Chapter 2, "Project Description." All new fixtures in proposed facilities would be low flow to meet current water conservation standards. Domestic wastewater is treated by two onsite septic systems at the Plant Site and additional onsite septic systems to be installed at the Quarry Site, which are regularly serviced by a commercial septic service and meet applicable County standards.
Policy PF-D.6: The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that permit installation of such disposal facilities without threatening surface or groundwater quality or posing any other health hazards and where community sewer service is not available and cannot be provided.	**Consistent:** The project includes the installation of two septic systems on the Quarry Site for disposal of domestic wastewater generated at that site. The Plant site is currently served by two permitted septic systems. As discussed in Impact 4.7-9 of Section 4.7, "Geology and Soils," the County's septic system permitting process would ensure that site soils and other characteristics are adequate to support the proposed systems.
SECTION E. STORM DRAINAGE AND FLOOD CONTROL	
Goal PF-E: To provide efficient, cost-effective, and environmentally-sound storm drainage and flood control facilities that protect both life and property and to divert and retain stormwater runoff for groundwater replenishment.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy PF-E.5: The County shall only approve land use-related projects that will not render inoperative any existing canal, encroach upon natural channels, and/or restrict natural channels in such a way as to increase potential flooding damage.	**Consistent:** The project would not involve any activities that could render a canal or channel inoperable, encroach upon natural channels, and/or restrict natural channels.

Goals/Objectives/Policies	Consistency Analysis
Policy PF-E.6: The County shall require that drainage facilities be installed concurrently with and as a condition of development activity to ensure the protection of the new improvements as well as existing development that might exist within the watershed.	**Consistent:** The project includes Surface Runoff and Drainage Plan (Appendix G-2), which would be reviewed and approved by County staff prior to project approval.
Policy PF-E.7: The County shall require new development to pay its fair share of the costs of Fresno County storm drainage and flood control improvements within unincorporated areas.	**Consistent:** To the extent applicable, the operator will be required to pay its fair share of costs of Fresno County storm drainage and flood control improvements on the project sites.
Policy PF-E.9: The County shall require new development to provide protection from the 100-year flood as a minimum.	**Consistent:** See discussion of Impact 4.10-11 of Section 4.10, "Hydrology and Water Quality." The project sites are located near the San Joaquin River; however, the river's floodplain does not extend into either project site. The floodplain for Little Dry Creek does extend into the northwest corner of the Plant Site; however, existing topography and berms prevent it from entering the majority of the site. The portion of the Plant Site within the Little Dry Creek floodplain is used for stockpiles and would be graded to drain into a pond upon reclamation of the site. Thus, the proposed project would be protected from the 100-year flood.
Policy PF-E.11: The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.	**Consistent:** The anticipated effects of the proposed project on site drainage are addressed in Section 4.10, "Hydrology and Water Quality," under Impacts 4.10-14, 4.10-15, and 4.10-16. The project sites have been subject to mining activities for many years resulting in substantial changes to the natural topography and site drainage patterns. However, the project would not alter the course of either the San Joaquin River or Little Dry Creek and all stormwater runoff on the project sites would continue to be contained onsite by existing berms.
Policy PF-E.13: The County shall encourage the use of natural storm water drainage systems to preserve and enhance natural drainage features.	**Consistent:** The Surface Runoff and Drainage Plan (Appendix G-2) indicates that during project operation all stormwater runoff would be contained within each site by existing berms. Upon reclamation, stormwater would sheet flow over the sites and into the open water of the reclaimed pits. The proposed drainage plan was designed to preserve the natural drainage features of adjacent properties and to avoid impacts to the San Joaquin River and Little Dry Creek.

Goals/Objectives/Policies	Consistency Analysis
Policy PF-E.14: The County shall encourage the use of retention-recharge basins for the conservation of water and the recharging of the groundwater supply.	**Consistent:** Runoff that collects in the excavations on the project sites is, in part, pumped to an existing recharge pond and recharge trenches on the project sites to recharge the aquifer. This practice would continue with the proposed project until the sites are reclaimed.
Policy PF-E.15: The County should require that retention-recharge basins be suitably landscaped to complement adjacent areas and should, wherever possible, be made available to the community to augment open space and recreation needs.	**Not Applicable:** This policy is intended for residential and urban areas of the county and does not apply to the project as an industrial use in a rural area. It is not possible for the onsite recharge basins to be made available to the public as the sites are actively used for mining activities. Upon reclamation of the project sites, slopes above the hardrock benches and the recharge ponds and trenches would be seeded or planted with native plant species for erosion control.
Policy PF-E.16: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.	**Consistent:** All project activities would be subject to the requirements of the applicable NPDES permits and SWPPP, which are intended to minimize sedimentation and erosion and other adverse water quality impacts.
Policy PF-E.19: In areas where urbanization or drainage conditions preclude the acquisition and use of retention-recharge basins, the County shall encourage the local agencies responsible for flood control or storm water drainage to discharge storm or drainage water into major canals and other natural water courses subject to the following conditions: a. The volume of discharge is within the limits of the capacity of the canal or natural water course to carry the water. b. The discharge complies with the requirements of applicable State and federal regulations (e.g., National Pollution Discharge Elimination System). c. The agency responsible for ownership, operation, or maintenance of the canal or natural water course approves of the discharge.	**Consistent:** According to the Surface Runoff and Drainage Plan (Appendix G-2), all site drainage would be contained onsite, and all stormwater drainage releases would comply the project's NDPES permits and SWPPP.
Policy PF-E.20: The County shall require new development of facilities near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in flood waters, flowing rivers, streams, creeks, or reservoir waters.	**Consistent:** See Impacts 4.9-1 and 4.9-2 of Section 4.9, "Hazards and Hazardous Materials," for a discussion of hazardous materials on the project site and the potential for accidental releases of such materials into the environment. Mitigation Measure 4.9-1 of Section 4.9 and Mitigation Measure 4.13-6 of Section 4.13, "Noise," are provided to prevent accidental release of pollutants.

Goals/Objectives/Policies	Consistency Analysis
Policy PF-E.21: The County shall require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities, and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.	**Consistent:** As discussed in Section 4.10, "Hydrology and Water Quality," the project would be required to implement BMPs during construction and operation by the project's NDPES permits and SWPPP.
SECTION F. LANDFILLS, TRANSFER STATIONS, AND SOLID WASTE PROCESSING FACILITIES	
Goal PF-F: To ensure the safe and efficient disposal or recycling of solid waste generated in the county in an effort to protect the public health and safety.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy PF-F.1: The County shall continue to promote maximum use of solid waste source reduction, reuse, recycling, composting, and environmentally-safe transformation of wastes.	**Consistent:** See discussion of Impact 4.19-3 of Section 4.19, "Utilities and Service Systems." The project would result in no net increase in solid waste generated at the project sites. Further, the project includes a concrete and asphalt recycling facility which promotes recycling in the County.
Policy PF-F.5: The County shall ensure that all new development complies with applicable provisions of the County Integrated Waste Management Plan	**Consistent:** See discussion of Impact 4.19-3 of Section 4.19, "Utilities and Service Systems." The project would comply with all applicable federal, state, and local statutes and regulations related to solid waste.
SECTION G. LAW ENFORCEMENT	
Goal PF-G: To protect life and property by deterring crime and ensuring the prompt and efficient provision of law enforcement service and facility needs to meet the growing demand for police services associated with an increasing population.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy PF-G.6: The County shall promote the incorporation of safe design features (e.g., lighting, adequate view from streets into parks) into new development by providing the Sheriff Department the opportunity to review development proposals.	**Consistent:** The project includes the installation of lighting where necessary to ensure worker safety as well as security fencing to prevent trespass. The project and this EIR will be provided to the Fresno County Sheriff Department for review and comment.
SECTION H. FIRE PROTECTION AND EMERGENCY MEDICAL SERVICES	
Goal PF-H: To ensure the prompt and efficient provision of fire and emergency medical facility and service needs, to protect residents of and visitors to Fresno County from injury and loss of life, and to protect property from fire.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy PF-H.2: Prior to the approval of a development project, the County shall determine the need for fire protection services. New development in unincorporated areas of the County shall not be approved until such time that fire protection facilities and services acceptable to the Public Works and Planning Director in consultation with the appropriate fire district are provided.	**Consistent:** See Section 4.15, "Public Services." The project would not significantly increase calls for emergency response and would have no effect on service level standards. No new or expanded fire protection facilities would be required.

Goals/Objectives/Policies	Consistency Analysis
Policy PF-H.5: The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.	**Consistent.** See Section 4.20, "Wildfire." The implementation of Mitigation Measure 4.13-6 would ensure that the use of explosives for blasting is carefully managed to minimize fire risk including compliance with applicable regulations and offsite storage.
Policy PF-H.9: The County shall require new development to develop or to pay its fair share of the costs to fund fire protection facilities that, at a minimum, maintain the service level standards in the preceding policies.	**Consistent:** See Section 4.15, "Public Services." The project would not significantly increase calls for emergency response and would have no effect on service level standards. No new or expanded fire protection facilities would be required.
Policy PF-H.10: The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the California Fire Code and other State and local ordinances.	**Consistent:** The proposed project plans and environmental documentation were provided to the local fire agency for review and comment.
FRESNO COUNTY GENERAL PLAN: OPEN SPACE & CONSERVATION ELEMENT	
SECTION A. WATER RESOURCES	
Goal OS-A: To protect and enhance the water quality and quantity in Fresno County's streams, creeks, and groundwater basins.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy OS-A.5: The County shall encourage, where economically, environmentally, and technically feasible, efforts aimed at directly or indirectly recharging the county's groundwater.	**Consistent:** Project operations include recharge of the underlying aquifer through direct pumping of water pumped from the excavations into unlined ponds and recharge trenches.
Policy OS-A.13: The County shall require that natural watercourses are integrated into new development in such a way that they are accessible to the public and provide a positive visual element and a buffer area between waterways and urban development in an effort to protect water quality and riparian areas.	**Not Applicable:** The project sites do not contain any natural water courses. Furthermore, the project does not propose any new development. However, the project includes a 200-foot buffer between planned disturbance areas on the Quarry Site and the adjacent San Joaquin River.
Policy OS-A.14: The County shall require the protection of floodplain lands and, where appropriate, acquire public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access, and recreation.	**Consistent:** The project would not result in any development within a floodplain. The northwest corner of the Plant Site is within the floodplain of Little Dry Creek. However, this portion of the site is and would continue to be used for stockpile storage. When the site is reclaimed, the stockpiles would be removed, and the site graded to drain to an existing pond.
Policy OS-A.15: The County shall support the policies of the San Joaquin River Parkway Master Plan to protect the San Joaquin River as an aquatic habitat, recreational amenity, aesthetic resource, and water source. (See Policy OSH. 12)	**Consistent:** See Impact 4.11-2, below. The project would be consistent with the policies of the San Joaquin River Parkway Master Plan as discussed further below in this table.

Goals/Objectives/Policies	Consistency Analysis
Policy OS-A.18: The County shall protect groundwater resources from contamination and overdraft by pursuing the following efforts: a) Identifying and controlling sources of potential contamination; b) Protecting important groundwater recharge areas; c) Encouraging water conservation efforts and supporting the use of surface water for urban and agricultural uses wherever feasible; d) Encouraging the use of treated wastewater for groundwater recharge and other purposes (e.g., irrigation, landscaping, commercial, and nondomestic uses); e) Supporting consumptive use where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area; f) Considering areas where recharge potential is determined to be high for designation as open space; and g) Developing conjunctive use of surface and groundwater.	**Consistent:** The project's potential impacts on groundwater resources are addressed in Section 4.10, "Hydrology and Water Quality." a) Potential impacts to groundwater quality at the project sites are addressed in Impacts 4.10-4 through 4.10-7. With implementation of Mitigation Measures 4.10-5a and 4.10-5b requiring funding and implementation of a Pond Adaptive Management Program on the Plant Site as well as Mitigation Measure 4.13-6, which requires implementation of the project's Blasting Protocols to minimize the risk of contamination of groundwater by explosives. b) The project sites are adjacent the San Joaquin River and are an important groundwater recharge area. Project impacts to groundwater recharge potential are addressed in Impact 4.10-13. The project would not add significant new areas of impervious surface and would not affect the existing recharge ponds and trenches used on site. c) Potential impacts to groundwater supplies are addressed in Impacts 4.10-9 and 4.10-10. These impacts concluded that the project would not adversely affect the sustainable management of the aquifer. d) Project operations include the reuse of wash water as well as its discharge into recharge ponds and trenches. e) Project operations utilize a combination of groundwater and surface water. Impacts 4.10-9 and 4.10-10 determined that the project would have less than significant impacts to groundwater supplies. f) Upon completion of mining activities, the project sites would be reclaimed as open space allowing for continued groundwater recharge. g) Project operations at the Plant Site currently, and would continue to, utilize both groundwater and surface water supplies.

Goals/Objectives/Policies	Consistency Analysis
Policy OS-A.19: The County shall require new development near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in storm waters, flowing river, stream, creek, or reservoir waters.	**Consistent:** See Impacts 4.9-1 and 4.9-2 of Section 4.9, "Hazards and Hazardous Materials," for a discussion of hazardous materials on the project site and the potential for accidental releases of such materials into the environment. Mitigation Measures 4.9-1 and 4.13-6 are provided to prevent the accidental release of pollutants.
Policy OS-A.20: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.	**Consistent:** The project's potential to result in sedimentation and erosion is addressed in Section 4.7, "Geology and Soils," under Impact 4.7-4, and in Section 4.10, "Hydrology and Water Quality," under Impact 4.10-14. These impact discussions determined that the project would have less than significant impacts related to soil erosion and sedimentation.
Policy OS-A.21: The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff.	**Consistent:** As discussed in Section 4.10, "Hydrology and Water Quality," under Impact 4.10-1, the project would be required by its NPDES permits to implement appropriate BMPs during project construction and operation.
Policy OS-A.27: The County shall support the monitoring of water quality measures to prevent contamination, including the prevention of hazardous materials from entering the wastewater system.	**Consistent:** As discussed in Section 4.10, "Hydrology and Water Quality," under Impact 4.10-1, the project would be required by its NPDES permits to implement appropriate BMPs during project construction and operation to prevent contaminant release and otherwise protect water quality. The project would also be subject to Mitigation Measure 4.13-6, which would regulate the use of explosives on the site. Implementation of this measure would minimize the project's potential to impact water quality.
Policy OS-A.24: In areas with increased potential for groundwater degradation (e.g., areas with prime percolation capabilities, coarse soils, and/or shallow groundwater), the County shall only approve land uses with low risk of degrading groundwater.	**Consistent:** The project's potential impacts to groundwater quality at both sites and during both the mining and reclamation phases are addressed in Impacts 4.10-4 through 4.10-7. The analyses determined that the project would have a potentially significant impact to groundwater quality at the Plant Site due to water quality of the pond that would form in the excavation pit after the completion of mining. To address this impact Mitigation Measure 4.10-5a requires implementation of a Plant Site Pond Adaptive Management Program while Mitigation Measure 4.10-5b requires establishment of a funding mechanism to ensure implementation of the program. The analyses further determined that the project would have a potentially significant impact to groundwater quality at the Quarry Site during mining operations due to

Goals/Objectives/Policies	Consistency Analysis
	blasting operations. To address this impact, Mitigation Measure 4.13-6 requires implementation of the project's Blasting Protocols to avoid the potential contamination of groundwater by explosives.
SECTION C. MINERAL RESOURCES	
Goal OS-C: To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy OS-C.3: The County shall require that the operation and reclamation of surface mines be consistent with the State Surface Mining and Reclamation Act (SMARA) and special zoning ordinance provisions.	**Consistent:** As discussed throughout this EIR, operation and reclamation of the proposed project would be consistent with SMARA and all applicable county regulations.
Policy OS-C.4: The County shall impose conditions as necessary to minimize or eliminate the potential adverse impact of mining operations on surrounding properties.	**Consistent:** The potential adverse impacts of the proposed mining operations are evaluated throughout this Draft Environmental Impact Report. Potential changes to views from surrounding properties are discussed in Section 4.1, "Aesthetics and Visual Resources." Dust and odor impacts are addressed in Section 4.3, "Air Quality." Potential effects on groundwater levels and quality are discussed in Section 4.10, "Hydrology and Water Quality." Potential noise and vibration impacts are addressed in Section 4.13, "Noise." Potential effects on roadways surrounding the project site are discussed in Section 4.17, "Transportation." Where necessary, mitigation measures are provided to minimize or avoid significant impacts to surrounding properties.
Policy OS-C.5: The County shall require reclamation of all surface mines consistent with SMARA and the County's implementing ordinance.	**Consistent:** The project would modify the existing reclamation plan for the project sites to incorporate the proposed operational changes. Upon completion of mining activities, both project sites would be reclaimed as open space consistent with SMARA and all applicable County regulations.
Policy OS-C.9: The County shall require that any proposed changes in land use within areas designated MRZ-2 along the San Joaquin and Kings Rivers comply with the provisions of the State Surface Mining and Reclamation Act (SMARA).	**Consistent:** The project is an expansion of the existing mining operation and does not propose any changes in land use. Further, the project would comply with the provisions of SMARA.

Goals/Objectives/Policies	Consistency Analysis
Policy OS-C.10: The County shall not permit land uses that threaten the future availability of mineral resources or preclude future extraction of those resources.	**Consistent:** Section 4.12, "Mineral Resources," provides an analysis of the proposed project's potential impacts to the availability of mineral resources in the county. As determined in Impact 4.12-1, the project would continue and expand current mineral resource extraction operations on the project sites and would not preclude future extraction of additional resources after reclamation.
SECTION D. NATURAL RESOURCES	
Goal OS-D: To conserve the function and values of wetland communities and related riparian areas throughout Fresno County while allowing compatible uses where appropriate. Protection of these resource functions will positively affect aesthetics, water quality, floodplain management, ecological function, and recreation/tourism.	**Not applicable.** Goal OS-D and the associated policies do not apply to the proposed project as neither the Quarry Site nor the Plant Site contains any wetlands or related riparian habitat. As discussed in Section 4.4.1.7 of Section 4.4, "Biological Resources," the various ponds, ditches, and other water features present on the project site do not meet the criteria for "waters of the state" and are not subject to Fish & Game Code section 1600 et. seq.
Policy OS-D.4: The County shall require riparian protection zones around natural watercourses and shall recognize that these areas provide highly valuable wildlife habitat. Riparian protection zones shall include the bed and bank of both low- and high-flow channels and associated riparian vegetation, the band of riparian vegetation outside the high-flow channel, and buffers of 100 feet in width as measured from the top of the bank of unvegetated channels and 50 feet in width as measured from the outer edge of the dripline of riparian vegetation.	**Consistent.** There is riparian vegetation present along both the San Joaquin River to the west of the project sites and Little Dry Creek immediately north of the Plant Site. As shown on Figure 2-7, "Proposed Plant Site Mining Plan," and Figure 2-8, "Proposed Quarry Site Mining Plan," in Chapter 2, the proposed mining areas within the project sites are setback from the river and creek. As determined by Impact 4.4-4, no riparian habitat would be directly disturbed as a result of the proposed project.
Policy OS-D.5: The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas.	**Consistent:** The project's potential impacts to upland habitat adjacent to the project sites are addressed in Section 4.4, "Biological Resources." Upland vegetation occurs between the banks of the San Joaquin River and each project site and consists primarily of non-native grassland. The project sites themselves are heavily disturbed and do not support native grasslands or any other upland habitat.
Policy OS-D.7: The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient storage, and wildlife habitats.	**Consistent:** Riparian vegetation adjacent to the project sites would not be directly disturbed by the proposed project and would remain available for these uses. Project Objective 10 specifically supports the development of trails along the San Joaquin River along the site's western boundary.

Goals/Objectives/Policies	Consistency Analysis
SECTION E. FISH AND WILDLIFE HABITAT	
Goal OS-E: To help protect, restore, and enhance habitats in Fresno County that support fish and wildlife species so that populations are maintained at viable levels.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy OS-E.1: The County shall support efforts to avoid the "net" loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function, and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the US Fish and Wildlife Service and the California Department of Fish and Wildlife to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.	**Consistent:** As discussed in Impacts 4.4-1 and 4.4-2 of Section 4.4, "Biological Resources," project activities would occur within the existing facility footprints on both project sites. The project would not result in the loss of any wildlife habitat. Further, potential impacts to special-status species would be mitigated through implementation of the measures provided in Section 4.4, "Biological Resources," and coordinated with USFWS and CDFW.
Policy OS-E.2: The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both onsite habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the US Fish and Wildlife Service and/or the California Department of Fish and Wildlife.	**Consistent:** Under the existing use permits for the project sites, buffers are maintained along all property boundaries. The riparian habitat associated with the San Joaquin River west of the Plant Site and Little Dry Creek north of the Plant Site would continue to be separated from proposed construction activities and mining operations by a buffer of more than 500 feet. The riparian habitat associated with the San Joaquin River west of the Quarry Site would continue to be separated from proposed construction activities and mining operations by a buffer of more than 200 feet. Potential effects of project construction and operation on the river and associated habitat are discussed in Section 4.4, "Biological Resources."

Goals/Objectives/Policies	Consistency Analysis
Policy OS-E.3: The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where feasible, located so that the value of the habitat for wildlife is maintained.	**Consistent:** As discussed in Impact 4.4-2 of Section 4.4, "Biological Resources," neither project site contains significant or highly valuable wildlife habitat. The riparian habitat associated with the San Joaquin River west of the project sites and the riparian habitat associated with Little Dry Creek north of the Plant Site provide wildlife habitat and serve as significant wildlife corridors in the area. However, as discussed in Impact 4.4-4, project activities would not extend offsite and would not adversely affect the riparian habitat.
Policy OS-E.6: The County shall ensure the conservation of large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife populations, as long as this preservation does not threaten the economic well-being of the County.	**Not applicable.** The Quarry Site and Plant Site do not contain large, continuous expanses of native vegetation.
Policy OS-E.9: Prior to approval of discretionary development permits, the County shall require, as part of any required environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special-status plants or animals. Such evaluation will consider the potential for significant impact on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.	**Consistent:** As discussed in Section 4.4.1.2 of Section 4.4, "Biological Resources," biological resources evaluations were performed by qualified biologists for the proposed project. The evaluations included field reconnaissance of the project sites at the appropriate times of year. These evaluations identified potential impacts to biological resources and provided mitigation measures to these impacts as discussed throughout Section 4.4.
Policy OS-E.11: The County shall protect significant aquatic habitats against excessive water withdrawals that could endanger special-status fish and wildlife or would interrupt normal migratory patterns.	**Consistent:** The project's water demands are shown in Table 4.19-1, of Section 4.19, "Utilities and Service Systems." With project implementation, water use from the San Joaquin River would decrease by 170 acre-feet/year in Stage 1 and will cease completely in Stage 2. Therefore, the project would decrease diversions from the river, resulting in a beneficial impact to the aquatic habitat.
Policy OS-E.12: The County shall ensure the protection of fish and wildlife habitats from environmentally-degrading effluents originating from mining and construction activities that are adjacent to aquatic habitats.	**Consistent:** The project's potential impacts to fish and wildlife habitats as a result of mining activities adjacent to aquatic habits are discussed throughout Section 4.4, "Biological Resources."

Goals/Objectives/Policies	Consistency Analysis
Policy OS-E.13: The County should protect to the maximum extent practicable wetlands, riparian habitat, and meadows since they are recognized as essential habitats for birds and wildlife.	**Consistent:** As discussed in Impacts 4.4-4 and 4.4-5, the project sites do not contain any wetlands, riparian habitat, or meadows. There is riparian habitat along the San Joaquin River west of the project sites and along Little Dry Creek north of the Plant Site; however, project activities would not extend into these areas, and potential indirect impacts from dust and noise/vibration are addressed through Mitigation Measure 4.3-2 and 4.13-6, respectively.
Policy OS-E.14: The County shall require a minimum 200-foot-wide wildlife corridor along particular stretches of the San Joaquin River and Kings River, whenever possible. The exact locations for the corridors should be determined based on the results of biological evaluations of these watercourses. Exceptions may be necessary where the minimum width is infeasible due to topography or other physical constraints. In these instances, an offsetting expansion on the opposite side of the river should be considered.	**Consistent:** The Plant Site is located 0.6 miles from the San Joaquin River. The Quarry Site is located adjacent to the San Joaquin River, but Quarry Site operations would not be conducted within 200 feet of the river. As discussed under Impact 4.4-4, project activities would not extend into wildlife corridors, and potential indirect impacts from dust and noise/vibration are addressed through Mitigation Measure 4.3-2 and 4.13-6, respectively.
Policy OS-E.16: The County should preserve in a natural state to the maximum possible extent areas that have unusually high value for fish and wildlife propagation.	**Consistent:** The project sites do not contain areas that have high value for fish and wildlife propagation. The San Joaquin River and associated riparian habitat west of the project sites are considered high value habitat; however, project activities would not extend into these areas, and potential indirect impacts from dust and noise/vibration are addressed through Mitigation Measure 4.3-2 and 4.13-6, respectively.
Policy OS-E.17: The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with State and Federal endangered species laws.	**Consistent:** The project sites provide only marginal habitat for any rare or endangered wildlife species and were found during surveys to be absent all special status animals, plants and plant communities.
SECTION F. VEGETATION	
Goal OS-F: To preserve and protect the valuable vegetation resources of Fresno County.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy OS-F.3: The County shall support the preservation of significant areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.	**Consistent:** The project sites are heavily disturbed and do not contain any significant areas of natural vegetation. As discussed in Impacts 4.4-2 and 4.4-4, the riparian habitat associated with the San Joaquin River west of the project sites and with Little Dry Creek north of the Plant Site would not be directly affected by the proposed project, and potential indirect impacts from dust and noise/vibration are addressed through Mitigation Measure 4.3-2 and 4.13-6, respectively.

Goals/Objectives/Policies	Consistency Analysis
Policy OS-F.5: The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.	**Consistent:** As discussed in Section 4.4.1.2, of Section 4.4, "Biological Resources," field surveys for special-status plant species were completed on both project sites by qualified biologists and at the appropriate times of year. The surveys determined that there are no special-status plant species present on either project site.
Policy OS-F.8: The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches and on unused or marginal land for the benefit of wildlife.	**Consistent:** The project is required to maintain buffers along property line. These buffer areas are not disturbed by project activities and contain natural and ruderal vegetation or landscaping. The various ditches and ponds present on the project sites are used as part of mining activities and may not be vegetated. However, upon completion of mining activities, both project sites would be reclaimed as open space including revegetation with native species.
Policy OS-F.10: The County shall require that new developments preserve natural woodlands to the maximum extent possible.	**Consistent:** The project sites do not contain any natural woodlands. The riparian corridor west of the project sites do contain habitat identified as Great Valley Mixed Riparian Forest; however, project activities would be limited to the project sites and would not extend offsite into the riparian corridor.
SECTION G. AIR QUALITY	
Goal OS-G: To improve air quality and minimize the adverse effects of air pollution in Fresno Count**y.**	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy OS-G.2: The County shall ensure that air quality impacts identified during the CEQA review process are fairly and consistently mitigated. The County shall require projects to comply with the County's adopted air quality impact assessment and mitigation procedures.	**Consistent:** See Section 4.3, "Air Quality." Mitigation is provided where necessary to reduce the project's air quality impacts to a level of less than significance. The Air District has acknowledged that its adopted air quality impact assessment and mitigation procedures are dated and that other, more current guidance documents may be relied upon. The Air Quality Assessment (Appendix D-1, "Air Quality, Health Risk, and Climate Change Impact Assessment") was prepared based on the Air Toxics Hotspots Program Guidance Manual for the Preparation of Risk Assessments (OEHHA 2015).

Goals/Objectives/Policies	Consistency Analysis
Policy OS-G.4: The County shall consult with the SJVUAPCD during CEQA review for projects that require air quality impact analysis and ensure that the SJVUAPCD is on the distribution list for all CEQA documents.	**Consistent:** The County has consulted with the SJVUAPCD on the proposed project and the SJVUAPCD is included in the distribution list for the project. The Notice of Preparation was provided to SJVUAPCD for review and comments on the project's scope were received in July 2020.
Policy OS-G.11: The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include but are not limited to industrial and manufacturing uses and any other use which have the potential for creating a hazardous or nuisance effect.	**Consistent:** The project does not propose the development of any residential uses or sensitive receptors. The quarry has been in operation for over 100 years. Residential uses and sensitive receptors in the vicinity of the quarry are identified in the EIR and potential land use conflicts and/or nuisance effects between the project and these uses are discussed in the appropriate sections of this Draft EIR (see Section 4.1, "Aesthetics and Visual Resources," Section 4.3, "Air Quality," Section 4.9, "Hazards and Hazardous Materials," Section 4.13, "Noise," and Section 4.17, "Transportation").
Policy OS-G.15: The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.	**Consistent:** The project does not propose any new roads or driveways. As shown in Figure 2-8, "Proposed Quarry Site Mining Plan," in Chapter 2, of this Draft EIR, the proposed 42-acre "plant site" at the Quarry Site would contain on-site parking for employees, customers, service/delivery vehicles and concrete mixers. The parking facilities were designed to support the proposed operations and would be appropriately sized. See Impact 4.3-2 of Section 4.3, "Air Quality," for a discussion of the proposed project's particulate emissions.
SECTION H. PARKS AND RECREATION	
Goal OS-H: To designate land for and promote the development and expansion of public and private recreational facilities to serve the needs of residents and visitors.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy OS-H.10: The County shall support the policies of the San Joaquin River Parkway Master Plan to protect the San Joaquin River as an aquatic habitat, recreational amenity, aesthetic resource, and water source.	**Consistent:** As discussed in greater detail below, the proposed project would be consistent with the San Joaquin River Parkway Master Plan. See Section 4.4, "Biological Resources," Section 4.16, "Recreation," Section 4.1, "Aesthetics and Visual Resources," Section 4.10, "Hydrology and Water Quality," and Section 4.19, "Utilities and Services Systems," for a discussion of the project's effects on aquatic habitat, recreation amenities, aesthetic resources, and water sources, respectively.

Goals/Objectives/Policies	Consistency Analysis
Policy OS-H.12: The County shall require that structures and amenities associated with the San Joaquin River Parkway be designed and sited to ensure that such features do not obstruct flood flows, do not create a public safety hazard, or result in a substantial increase in off-site water surface elevations, and that they conform to the requirements of other agencies having jurisdiction. For permanent structures, such as bridge overcrossings, the minimum level of flood design protection shall be the greater of the Standard Project Flood (which is roughly equivalent to a 250-year event) or the riverine requirements of other agencies having jurisdiction to ensure flood flows are not dammed and to prevent flooding on surrounding properties.	**Not Applicable:** The project sites are located 0.6 and 0.1 miles east of the San Joaquin River and outside the floodplain for the river. The project sites are private properties and are not part of the San Joaquin River Parkway.
SECTION I. RECREATIONAL TRAILS	
Goal OS-I: To develop a system of hiking, riding, and bicycling trails and paths suitable for active recreation and transportation and circulation.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy OS-I.3: The County shall require that adequate rights-of-way or easements are provided for designated trails or bikeways as a condition of land development approvals.	**Consistent:** See Section 2.5.8 in Chapter 2, "Project Description." The project includes the offer of easements for the potential future development of a bicycle lane and a multi-use trail in accordance with existing local transportation planning documents.
SECTION J. HISTORICAL, CULTURAL, AND GEOLOGICAL RESOURCES	
Goal OS-J: To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County's historically significant resources in order to promote historically significant resources in order to promote historical awareness, community identity, and to recognize the county's valued assets that have contributed to past county events, trends, styles or architecture, and economy.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy OS-J.4: The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, tribal, paleontological, and cultural sites and resources. For projects requiring ground disturbance and located within a high or moderate cultural sensitivity areas, a cultural resources technical report may be warranted, including accurate archival research and site surveys conducted by qualified cultural resources practitioners. The need to	**Consistent:** See Section 4.5, "Cultural Resources," Section 4.18, "Tribal Cultural Resources," and Section 4.7, "Geology and Soils," for analyses of the project's potential impacts to archaeological, paleontological, and cultural sites. Mitigation Measures 4.5-2, 4.5-3, and 4.7-11 are provided to avoid and minimize impacts to significant resources discovered during project implementation.

Goals/Objectives/Policies	Consistency Analysis
prepare such studies shall be determined based on the tribal consultation process and initial outreach to local or state information centers.	
Policy OS-J.6: The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.	**Consistent:** See Section 4.18, "Tribal Cultural Resources." In accordance with AB 52, the County contacted local Native American tribes regarding the project and solicited comments. No tribes responded or requested consultation on the project.
Policy OS-J.10: The County shall use the State Historic Building Code and existing legislation and ordinances to encourage preservation of cultural resources and their contributing environment.	**Consistent:** See Section 4.5, "Cultural Resources," and Section 4.18, "Tribal Cultural Resources." As discussed in these sections, the project would not affect any known cultural resources and implementation of mitigation measures would avoid and minimize impacts to significant resources discovered during project implementation.
Policy OS-J.13: The County shall encourage property owners to enter into open space easements for the protection of unique geologic resources.	**Not Applicable:** As discussed under Impact 4.7-10 of Section 4.7, "Geology and Soils," the project sites do not contain any unique geologic resources.
SECTION K. SCENIC RESOURCES	
Goal OS-K: To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy OS-K.1: The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.	**Consistent:** As discussed previously, mining operations have been ongoing at the combined project sites for over 100 years. The proposed project modifications would not change the historic or existing visual character of the project sites or surrounding area that are already impacted. However, visual impacts from portions of Madera County would be increased and considered significant impacts. As discussed in Section 4.1, "Aesthetics and Visual Resources," the project has been designed to minimize visual impacts to surrounding public viewpoints (e.g., placement of equipment/structures in the bottom of the pit, perimeter screening). Additionally, predicted visual impacts resulting from the project at nearby sensitive viewpoints were assessed using the BLM's rating criteria. As such, the project would not substantially change the existing visual character of the project sites or surrounding areas, except for views from residents located in Madera County.

Goals/Objectives/Policies	Consistency Analysis
Policy OS-K.2: The County shall maintain an inventory and map of significant scenic resources within the County.	**Consistent:** The closest County-designated scenic resource is the portion of N. Friant Road adjacent to the both the Plant Site and the Quarry Site. Referring to Table 3, "Friant Road from the City of Fresno to Lost Lake Road," which includes the portion of N. Friant Road fronting the project sites, is considered a County-Designated Scenic Highway. However, as discussed in Section 4.1, "Aesthetics and Visual Resources," the project sites have been designed to minimize impacts to public viewpoints from this roadway and would not substantially change the existing visual character of the project sites or surrounding areas.
Policy OS-K.4: The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.	**Consistent:** As discussed previously, the project has been designed to minimize visual impacts to surrounding public viewpoints (e.g., placement of equipment/structures in the bottom of the pit, perimeter screening). Additionally, Mitigation Measure 4.1-1 requires staining of the quarry pit walls at the Quarry Site to reduce color contrast and thereby reduce changes in visual character for residents with views of the Quarry Site in Madera County.
SECTION L. SCENIC ROADWAYS	
Goal OS-L: To conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in Fresno County.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy OS-L.1: The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways. Definitions and designated roadways are shown in the Scenic Roadways list below. Figure OS-1 shows the locations of the designated roadways.	**Consistent.** See response to Policy OS-K.2 above. The portion of N. Friant Road fronting the project sites is a County-designated Scenic Highway. However, the project would not significantly impact public views from this roadway.
Policy OS-L.4: The County shall require proposed new development along designated scenic roadways within urban areas and unincorporated communities to underground utility lines on and adjacent to the site of proposed development or, when this is infeasible, to contribute their fair share of funding for future undergrounding.	**Not Applicable:** The project sites are not within an urban area or an unincorporated community.
FRESNO COUNTY GENERAL PLAN: HEALTH AND SAFETY ELEMENT	
SECTION B. FIRE HAZARDS	
Goal HS-B: To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.

Goals/Objectives/Policies	Consistency Analysis
Policy HS-B.1: The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.	**Consistent:** See Impact 4.9-6 of Section 4.9, "Hazards and Hazardous Materials," and Section 4.20, "Wildfire," for an evaluation of the project's potential fire hazards.
Policy HS-B.7: The County shall require new discretionary development projects to have adequate access for fire and emergency vehicles and equipment. All major subdivisions shall have a minimum of two (2) points of ingress and egress. The County shall implement feasible recommendations in AB 2911 Office of the State Fire Marshall Subdivision Survey Reports, which survey subdivisions without a secondary means of egress routes for evacuation and other fire safety factors.	**Consistent:** The project does not propose any changes to ingress or egress points at either project site. Adequate access to the project sites would be maintained for emergency response.
Policy HS-B.10: The County shall refer development proposals in the Very High Fire Hazard Severity Zones and State Responsibility Areas of the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety standards. If dual responsibility exists, both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall apply.	**Consistent:** Both the project application and NOP were provided to the Fresno County Fire Protection District for review and comment. This Draft EIR will also be provided to the Fire Protection District for review.
SECTION C. FLOOD HAZARDS	
Goal HS-C: To minimize the risk of loss of life, injury, and damage resulting from flood hazards.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy HS-C.4: The County shall require that all placement of structures and/or floodproofing be done in a manner that will not cause floodwaters to be diverted onto adjacent property, increase flood hazards to other property, or otherwise adversely affect other property.	**Not Applicable:** See discussion of Impact 4.10-16 of Section 4.10, "Hydrology and Water Quality." All proposed improvements would be located outside the floodplain.
Policy HS-C.12: The County shall encourage the performance of appropriate investigations to determine the 200-year water surface elevations for the San Joaquin River, taking into account recent storm events and existing channel conditions, to identify the potential extent and risk of flooding. New development, including public infrastructure projects, shall not be allowed along the river until the risk of flooding at the site has been determined and appropriate flood risk reduction measures identified.	**Consistent:** See discussion of Impact 4.10-16 of Section 4.10, "Hydrology and Water Quality." The project sites are located near the San Joaquin River; however, the river's floodplain does not extend into either project site. The floodplain for Little Dry Creek does extend into the northwest corner of the Plant Site. This portion of the Plant Site is used for stockpiles and would be graded to drain into a pond upon reclamation of the site. Thus, the proposed project would be protected from the 100-year flood.

Goals/Objectives/Policies	Consistency Analysis
Policy HS-C.14: The County shall promote flood control measures that maintain natural conditions within the 200-year floodplain of rivers and streams and, to the extent possible, combine flood control, recreation, water quality, and open space functions. Existing irrigation canals shall be used to the extent possible to remove excess stormwater. Retention-recharge basins should be located to best utilize natural drainage patterns.	**Not Applicable:** See discussion of Impact 4.10-16 of Section 4.10, "Hydrology and Water Quality." All proposed improvements would be located outside the floodplain and no flood control measures are required. The project sites have been subject to mining activities for over 100 years and the natural drainage patterns have been heavily disturbed. Stormwater runoff would continue to be directed to existing onsite ponds, canals, and trenches as necessary to accommodate mining operations.
Policy HS-C.16: The County shall continue to implement and enforce its Floodplain Management Ordinance. During the building permit review process, the County shall ensure project compliance with applicable Federal Emergency Management Agency (FEMA) standards pertaining to residential and non-residential development in the floodplain, floodway, or floodway fringe.	**Not Applicable:** See discussion of Impact 4.10-16 of Section 4.10, "Hydrology and Water Quality." All proposed improvements would be located outside the floodplain.
Policy HS-C.18: The County shall encourage open space uses in all flood hazard areas. Land Conservation contracts and open space and scenic easements should be made available to property owners.	**Not Applicable:** See discussion of Impact 4.10-16 of Section 4.10, "Hydrology and Water Quality." All proposed improvements would be located outside the floodplain.
SECTION D. SEISMIC AND GEOLOGIC HAZARDS	
Goal HS-D: To minimize the loss of life, injury, and property damage due to seismic and geologic hazards.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy HS-D.1: The County shall continue to support scientific geologic investigations that refine, enlarge, and improve the body of knowledge on active fault zones, unstable areas, severe groundshaking, avalanche potential, and other hazardous geologic conditions in Fresno County.	**Not Applicable:** Geologic investigations of both the Plant Site and the Quarry Site were conducted in support of the proposed project. However, there are no active fault zones, unstable areas, or other hazardous geologic conditions on or near the project site.
Policy HS-D.3: The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development, including public infrastructure projects, in areas prone to geologic or seismic hazards (i.e., fault rupture, groundshaking, lateral spreading, lurch cracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).	**Consistent:** Soils and geologic assessments were prepared for both project sites in support of the proposed project. See Appendix F, "Geology and Soils Reports."

Goals/Objectives/Policies	Consistency Analysis
Policy HS-D.6: The County shall ensure compliance with State seismic and building standards in the evaluation, design, and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous material manufacture and storage facilities, bridges, large public assembly halls, and other structures subject to special seismic safety design requirements.	**Consistent:** Hazardous materials are stored on the project sites. All proposed structures would be designed and constructed in compliance with state seismic and building standards.
Policy HS-D.7: The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects, that requires a County permit and is located in an area containing soils with high "expansive" or "shrink-swell" properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.	**Consistent:** As discussed in Section 4.7.1.2 and Impact 4.7-8 of Section 4.7, "Geology and Soils," soils on the Plant Site and Quarry Site have low shrink-swell potential.
Policy HS-D.8: The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.	**Consistent:** Soil erosion resulting from project implementation is discussed in Section 4.7, "Geology and Soils" under Impact 4.7-4. Soil erosion would be minimized through project design and implementation of BMPs. Where appropriate, slopes would be revegetated as part of site reclamation.
Policy HS-D.9: The County shall require the preparation of drainage plans for development or public infrastructure projects in hillside areas to direct runoff and drainage away from unstable slopes.	**Not Applicable:** The Plant Site and Quarry Site are in an area of relatively flat topography. The drainage plan for the proposed project is described in Section 4.10.3.2 of Section 4.10, "Hydrology and Water Quality." Stormwater runoff would be captured and retained onsite.
Policy HS-D.10: The County shall not approve a County permit for new development, including public infrastructure projects where slopes are over thirty (30) percent unless it can be demonstrated by a California-registered civil engineer or engineering geologist that hazards to public safety will be reduced to acceptable levels.	**Not Applicable:** The project sites are located in areas of relatively flat topography that do not contain slopes of over 30 percent.
Policy HS-D.11: In known or potential landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems, undercutting the bases of slopes, removal of vegetative cover, and steepening of slopes.	**Not Applicable:** Landslide potential on the Plant Site and Quarry Site is addressed in Section 4.7, "Geology and Soils," under Impact 4.7-3. The Plant Site and Quarry Site are relatively flat and are not in immediate proximity to the bluffs located to the west and east.

Goals/Objectives/Policies	Consistency Analysis
SECTION F. HAZARDOUS MATERIALS	
Goal HS-F: To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy HS-F.1: The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.	**Consistent:** Project implementation, including design, construction, and operation, would comply with all applicable federal, state, and local regulations pertaining to hazardous materials. Compliance would be assured through implementation of the facility's Hazardous Materials Business Plan and Spill Prevention Control and Countermeasure (SPCC) plan, which are overseen by the Fresno County Environmental Health Division, as well as the facility's Stormwater Pollution Prevention Plan (SWPPP), which are enforced as part of the Industrial General Permit.
Policy HS-F.2: The County shall require that applications for discretionary development projects that will use hazardous materials or generate hazardous waste in large quantities include detailed information concerning hazardous waste reduction, recycling, and storage.	**Consistent:** Section 4.9, "Hazards and Hazardous Materials," discusses in detail the project's proposed use, transport, storage, and disposal of hazardous materials.
Policy HS-F.4: For redevelopment or infill projects or where past site uses suggest environmental impairment, the County shall require that an investigation be performed to identify the potential for soil or groundwater contamination. In the event soil or groundwater contamination is identified or could be encountered during site development, the County shall require a plan that identifies potential risks and actions to mitigate those risks prior to, during, and after construction.	**Consistent:** As discussed in greater detail in subsection 4.9.1.2 of Section 4.9, "Hazards and Hazardous Materials," there are no known areas of soil or groundwater contamination within or near the quarry. Further, the quarry is not included on a list of hazardous materials sites maintained by the government. There is the potential for PCB-containing building materials to be present on site. Mitigation Measure 4.9-1, is provided in the Draft EIR to address this potential impact.
Policy HS-F.7: The County shall ensure that the mining and processing of minerals in the County is conducted in compliance with applicable environmental protection standards.	**Consistent:** The proposed project's compliance with applicable environmental protection standards is discussed throughout this Draft EIR.
SECTION H. NOISE	
Goal HS-H: To protect residential and other noise-sensitive uses from exposure to harmful or annoying noise levels; to identify maximum acceptable noise levels compatible with various land use designations; and to develop a policy framework necessary to achieve and maintain a healthful noise environment.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.

Goals/Objectives/Policies	Consistency Analysis
Policy HS-H.1: The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.	**Consistent:** See Section 4.13, "Noise." Site topography and existing aggregate stockpiles provide partial to extensive shielding of operational noise sources and minimize impacts to surrounding uses.
Policy HS-H.3: The County shall allow the development of new noise-sensitive land uses (which include, but are not limited to, residential neighborhoods, schools, and hospitals) only in areas where existing or projected noise levels are "acceptable" according to the Figure HS-9: "Land Use Compatibility for Community Noise Environments." Noise mitigation measures may be required to reduce noise in outdoor activity areas and interior spaces to these levels.	**Not Applicable:** The project does not propose the development of any new noise-sensitive land uses.
Policy HS-H.4: So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where: a) Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are "generally unacceptable" or higher according to the Figure HS-9: "Land Use Compatibility for Community Noise Environments;" b) Proposed projects are likely to produce noise levels exceeding the levels shown in the County's Noise Control Ordinance at existing or planned noise-sensitive uses.	**Consistent:** Multiple acoustical analyses were completed in support of the proposed project. See Appendix H, "Noise Assessment."
Policy HS-H.5: Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis of such measures upon site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The County shall consider the use of noise barriers, such as soundwalls, as a means of achieving the noise standards after other design-related noise mitigation measures have been evaluated or integrated into the project.	**Consistent:** Due to the nature of the project, noise mitigation measures are focused on plant and equipment operation rather than project design. However, as discussed previously, the existing topography and aggregate stockpiles on the site provide partial to extensive shielding of operational noise sources and minimize potential impacts to surrounding uses.
Policy HS-H.6: The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.	**Consistent:** Impacts 4.13-1, 4.13-2, 4.13-3 and 4.13-4 of Section 4.13, "Noise," address potential temporary increases in ambient noise levels. Where necessary, mitigation measures are provided to reduce impacts to less than significant levels.

Goals/Objectives/Policies	Consistency Analysis
Policy HS-H.8: The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, "Land Use Compatibility for Community Noise Environments."	**Consistent**. The information provided in Chart HS-1 has been incorporated into the Draft EIR as Table 4.13-6, "Land Use Compatibility for Community Noise Exposure." The chart was used in the evaluation of the project's potential noise impacts.
FRESNO COUNTY GENERAL PLAN: HOUSING ELEMENT	
SECTION G. HOUSING AND NEIGHBORHOOD PRESERVATION, MAINTENANCE AND IMPROVEMENT	
Goal H-G: To promote the safety, stability, character and integrity of existing neighborhoods through maintenance and improvement of the condition of the existing housing stock and the neighborhoods in which it is located.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy H-G.5: The County shall manage development of land within and adjacent to existing neighborhoods to avoid adverse impacts on the living environment.	**Consistent:** There are scattered rural residential developments surrounding the project sites. The project is an existing use that predates the development of any of these residential uses. Regardless, an analysis of the proposed project's potential impacts to surrounding uses, including residences, is provided throughout this EIR. Wherever necessary, mitigation measures are provided to avoid or minimize identified impacts. See Section 4.1, "Aesthetics and Visual Resources," Section 4.3, "Air Quality," 4.10, "Hydrology and Water Quality," 4.13, "Noise," and 4.17, "Transportation."
MADERA COUNTY GENERAL PLAN: SECTION 1, LAND USE	
SUB-SECTION H. VISUAL AND SCENIC RESOURCES	
Goal 1.H: To protect the visual and scenic resources of Madera County as important quality-of-life amenities for county residents and a principal asset in the promotion of recreation and tourism.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy 1.H.1: The County shall require that new development in scenic rural areas is planned and designed to avoid locating structures along ridgelines, on steep slopes, or in other highly-visible locations, except under the following conditions: a) Such a location is necessary to avoid hazards; or b) The proposed construction will incorporate design and screening measures to minimize the visibility of structures and graded areas.	**Consistent:** The project is not located on a ridgeline, steep slope, or other highly visible location. Additionally, the project would not change the existing land use of the project sites, which are active mining operations. The project has been designed to minimize visibility from public viewpoints, and no new structures would be installed along ridgelines, elevated areas, or highly visible locations. Although the project is located within and is under the jurisdiction of Fresno County, due to the proximity of the project sites to Madera County, both the Fresno and Madera County policies for visual impacts were considered. The analysis of potential visual impacts in Section 4.1, 'Aesthetics and Visual Resources," determined potentially significant impacts to views for residences in Madera County. Mitigation Measure 4.1.1 was

Goals/Objectives/Policies	Consistency Analysis
	developed to reduce this impact and requires staining of the quarry pit walls at the Quarry Site to reduce color contrast and thereby reduce changes in visual character. As discussed throughout this section, the project is consistent with applicable Fresno and Madera County policies and requirements. Furthermore, it is assumed that the project application will be sent to Madera County for consideration and comment.
SUB-SECTION I. SCENIC ROUTES	
Goal 1.I: To develop a system of scenic routes serving the needs of residents and visitors to Madera County and to preserve, enhance, and protect the scenic resources visible from these scenic routes.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy 1.I.3: The County shall protect and enhance scenic corridors through such means as design review, sign control, undergrounding utilities, scenic setbacks, density limitations, planned unit developments, grading and tree removal standards, open space easements, and land conservation contracts.	**Consistent:** There are no Madera County or state-designated scenic routes that would be affected by the project. The closest Madera County state-designated scenic highway is a portion of State Route 41 located near the community of Oakhurst over 24-miles away.
MADERA COUNTY GENERAL PLAN: SECTION 5, AGRICULTURAL AND NATURAL RESOURCES	
SUB-SECTION I. MINERAL RESOURCES	
Goal 5.I: To encourage commercial mining operations within areas designated for such extraction, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated, and to provide for the timely rehabilitation and appropriate reuse of mining sites.	**Consistent:** The proposed project would be consistent with each of the applicable policies under this goal.
Policy 5.I.1: The County shall require new mining operations to be designed to provide a buffer between existing or likely adjacent uses, minimize incompatibility with nearby uses, and adequately mitigate their environmental and aesthetic impacts. The buffer area shall be zoned Agricultural, Rural, Exclusive-20 Acre or -40 Acre (ARE-20 and ARE-40)	**Not Applicable:** The project is not a new mining operation. Mining has been conducted at the quarry for more than a century. Therefore, this impact does not apply to the proposed project. However, the project would be consistent with this policy. See Section 4.1, "Aesthetics and Visual Resources," for a discussion of potential impacts and mitigation related to aesthetics.
Policy 5.I.5: The County shall coordinate its mineral extraction policies and regulations with Fresno County, the City of Fresno, and Merced County. The County shall refer applications for mining operations in locations near or adjacent to a city or another county to the affected city or county for review and comment.	**Consistent:** Although the project is located within and is under the jurisdiction of Fresno County, due to the proximity of the project sites to Madera County, both the Fresno and Madera County policies were considered. As discussed throughout this section, the project is consistent with applicable Fresno and Madera County policies and requirements. Furthermore, it is assumed that the project application will be sent to Madera County for consideration and comment.

Goals/Objectives/Policies	Consistency Analysis
FRESNO COUNTY ZONING ORDINANCES	
SECTION 858, SURFACE MINING AND RECLAMATION ORDINANCE	
H. Mining and Reclamation Standards **The standards for surface mining operations and reclamation shall be as follows:**	
1. No extraction of material or overburden shall be permitted within twenty-five (25) feet of any property boundary nor within fifty (50) feet of a boundary contiguous with a public road right-of-way or recorded residential subdivision.	**Consistent:** The approved CUPs for the quarry operation prohibit placement of stockpiled soil or other materials within 25 feet of any property boundary or within 50 feet of any public right-of-way, consistent with these standards. There are two rural residential subdivisions adjacent to the Quarry Site and no residential subdivisions adjacent to the Plant Site. Under the proposed project, the quarry would continue to comply with these standards.
2. No stockpiled soil or material shall be placed closer than twenty-five (25) feet from a property boundary.	**Consistent:** The quarry is restricted by its approved CUPs from placing any stockpiles of soil or other materials within 25 feet of a property boundary. Under the proposed project, the Quarry would continue to comply with these standards.
4. Security fencing four (4) feet in height consisting of not less than three (3) strands of barbed wire, or an approved equivalent, shall be placed along any property line abutting a public right-of-way and around any extraction area where slopes steeper than two (2) feet horizontal to one (1) foot vertical are maintained. Such interior fencing will not be required where exterior fencing surrounds the property.	**Consistent:** The project sites are currently partially fenced. Upon project approval, fencing meeting these standards would be erected along all project site boundaries.
5. Screening of the site shall be achieved by planting trees of a variety approved by the Director along all property lines adjacent to a public road right-of-way or a recorded residential subdivision. Adequate screening can generally be achieved with evergreen trees planted in two (2) staggered rows, with twenty (20) feet between the rows and between the trees in each row. As an alternative, oleanders or shrubs of a similar size and density may be planted in the same pattern at ten (10) foot intervals. The plant species and planting plan and timetable shall be designated in the Mining and Reclamation Plan. All required plants shall be maintained in a good horticultural manner. In areas where it is found that the planting of trees or shrubs will not achieve the desired screening effect due to soil conditions, the Director may approve an alternate method of screening consisting of meandering dirt berms of sufficient height to	**Consistent:** The Plant Site has landscape screening along North Friant Road, the adjacent public right-of-way, consistent with the existing CUP conditions. The Quarry Site would add landscape screening consistent with these standards. Existing and proposed plantings for the project sites are described in Chapter 2, "Project Description."

Goals/Objectives/Policies	Consistency Analysis
screen the site. (Amended by Ord. T- 252 adopted 12-9-80)	
7. Where an access road intersects a County-maintained road, it shall be improved with a driveway approach constructed to Fresno County Standards.	**Consistent:** No new access roads are proposed as part of the project. The existing access roads at the Quarry Site and Plant Site, which intersect North Friant Road, were designed and constructed to Fresno County Standards.
20. Good operating practices shall at all times be utilized to minimize noise, vibration, dust and unsightliness. In reviewing a proposal, the Planning Commission shall consider: a) The location of the processing plant. b) The location where unused equipment will be stored. c) Proposals for the removal of all structures, metallic equipment, debris, or objects upon conclusion of the extraction operations.	**Consistent:** The existing and proposed operations were designed to minimize impacts to surrounding properties. The site is subject to minimum setbacks from public rights-of-way and adjacent properties, and screening berms and landscaping are provided along public rights-of-way. In addition, no stockpiled soil or material stockpiles are permitted near property boundaries. Finally, upon completion of proposed mining operations, both the Quarry Site and the Plant Site would be reclaimed as open space with all structures, equipment, and debris removed.
22. Any night lighting established on the property shall be arranged and controlled so as not to illuminate public rights-of-way or adjacent properties.	**Consistent:** See Impact 4.1-4 of Section 4.1, "Aesthetics and Visual Resources," for a discussion of the proposed project's lighting plan and potential impacts to daytime and nighttime views. The project would not require nighttime lighting and all proposed lighting fixtures would comply with the County's development standards to prevent light spillage.
SAN JOAQUIN RIVER PARKWAY MASTER PLAN	
Goal FG.6: Develop the Parkway in a transparent and cooperative manner among local and state agencies; nonprofit land trusts, conservation, and stewardship organizations; neighboring landowners; and other stakeholders.	**Consistent:** The applicant is a longtime neighboring landowner to several properties that are part of the San Joaquin River Parkway, including the Willow Unit Ecological Reserve (CDFW), the Ball Ranch Natural Reserve (SJRC), Ledger Island Natural Reserve (SJRC), Peck Ranch (Parkway Trust), Lost Lake Regional Park (Fresno County), and Beck Ranch (SJRC). With the project, the applicant would continue its past practice of support and assistance with Parkway goals, policies, and operations. The applicant will offer potential trail easements at the Plant Site and the Quarry Site.
Policy Habitat 7: Enhance, restore, and maintain native vegetation, riparian, wetland, woodland, and grassland habitats within natural reserves, open spaces, and wildlife corridors.	**Consistent:** The entire Plant Site is disturbed by mining and processing operations except the required setbacks from Friant Road. The proposed project would not disturb the existing wildlife corridors along the San Joaquin River to the west or Little Dry Creek to the north. Reclamation of the Plant Site would create approximately 138.5 acres of open space, riparian, and open water wildlife habitat that complement and enhance goals of the Parkway Master Plan.

Goals/Objectives/Policies	Consistency Analysis
	Most of the Quarry Site has been partially mined and is almost entirely disturbed (over 90%) by the current and historical mining operations except for the required setbacks from the San Joaquin River and Friant Road. The project would maintain the existing 200-foot mining setback from the edge of the San Joaquin River required under the existing CUPs that protects the natural reserve areas that are part of the wildlife corridor along the river. Reclamation of the Quarry Site would create approximately 352.4 acres of open space, riparian, and open water wildlife habitat that complement and enhance goals of the Parkway Master Plan.
Policy Habitat 9: Incorporate natural features (e.g., wetlands, grasslands, woodlands, and other native vegetation) and integrate supporting artificial features (e.g. existing access roads, ponds on reclaimed mined lands) into Parkway development.	**Consistent:** See discussion under Policies Habitat 7.
Policy Habitat 16: Use native plant species for landscaping and vegetation restoration to the greatest extent possible.	**Consistent:** Revegetation at both sites would include native species for landscaping and vegetation restoration that would provide food and habitat for wildlife.
Policy Habitat 34: Enhance pond habitat and associated wetland vegetation to benefit geese and other waterfowl (e.g. rocks, logs, nest boxes, artificial islands, foraging habitat).	**Consistent:** The Rockfield Quarry has been certified by the Wildlife Habitat Council as a conservation site since 2017. As part of the regional effort to restore and enhance streamside forest habitat, the applicant has installed and continues to monitor and maintain nest boxes for cavity-nesting songbirds like ash-throated flycatchers, tree swallows, house wrens, and western bluebirds. The nest boxes are located along the riparian corridor of the San Joaquin River, just south of Lost Lake Park Audubon Important Bird Area. Installing nest boxes provides migratory birds with nesting sites to raise young in their breeding habitat and roosting sites in their overwintering habitat. This conservation project aligns with the important conservation needs of the area.
Policy Habitat 36*:* Place a high priority on riparian habitat conservation and restoration to establish and enhance wildlife habitat and corridors and improve aquatic habitat.	**Consistent:** See discussion under Policies Habitat 7.

Goals/Objectives/Policies	Consistency Analysis
Policy Mineral 2: For new mining permit applications in the Parkway planning area, provide recommendations to local land use control agencies to protect existing riparian woodlands, enhance or complement the revegetation of the river wildlife corridor and adjacent areas, improve excavated gravel ponds by providing for specific wildlife habitat needs or replication of natural landscapes, and to reflect public safety needs.	**Consistent:** The entire Plant Site is disturbed by mining and processing operations with the exception of required setbacks from Friant Road. The proposed project would not disturb the existing wildlife corridors along the San Joaquin River to the west or Little Dry Creek to the north. Reclamation of the Plant Site would create approximately. 138.5 acres of open space, riparian, and open water wildlife habitat that complement and enhance goals of the Parkway Master Plan. slopes surrounding the approximate. 95-acre reclaimed pond would be seeded with native grasses and forbs and planted with native plants that would provide food and habitat for wildlife. The perimeter of the Plant Site would be fenced with minimum four (4) foot high ranch fencing consisting of metal T-posts and minimum three (3) strands of barbed wire. At the Quarry Site, an approximately 110-acre pond will be located at the bottom of the excavation. Slopes (alluvial and weathered granite) above the hard rock benches would be seeded with native grasses and forbs that will provide food and habitat for wildlife. The perimeter of Plant Site will be fenced with minimum four (4) foot high ranch fencing consisting of metal T-posts and minimum three (3) strands of barbed wire. See also the discussion under Policies Habitat 7.
Policy Mineral 3: In public Parkway areas that have significant sand and gravel reserves that may be needed for the San Joaquin River Restoration Program or other habitat and floodplain restoration needs, site significant permanent structures where they will not preclude or interfere with future extraction of those resources.	**Consistent:** The project proposes to mine aggregate resources within the footprint of the existing Plant Site and Quarry Site. At the Plant Site the project would mine the remaining alluvial deposit. At the Quarry Site, the project would mine the hard rock below the alluvial deposit currently being mined. This would conserve areas that have significant sand and gravel reserves along the San Joaquin River that may be needed for the San Joaquin River Restoration Program or other habitat and floodplain restoration needs. In addition, it will conserve other areas of aggregate resources for future recovery.

Goals/Objectives/Policies	Consistency Analysis
Policy Access 1: Acquire, through purchase, easements, or other mutually satisfactory transactions, land for recreation areas and the expansion of existing parks and recreation areas.	**Consistent:** At the Plant Site, the applicant would offer a potential easement for a public trail to the SJRC along the Friant Road frontage of the Plant Site providing needed connectivity to planned trails in the area as shown on the Parkway Master Plan. At the Quarry Site, the applicant would offer a potential easement for a public trail to the SJRC along the existing 200-foot setback from the San Joaquin River providing the potential for the planned Parkway trails in the area, together with the offer of the trail easement at the Plant Site, to be extended an additional three miles.
Policy Oper.8: As appropriate, seek donations, facilitate land exchanges, acquire easements, and create mitigation partnerships whenever possible to minimize expenditures of public funds for land acquisitions.	**Consistent:** At the Plant Site, the applicant would offer a potential easement for a public trail to the SJRC along the Friant Road frontage of the Plant Site providing needed connectivity to planned trails in the area as shown on the Parkway Master Plan. At the Quarry Site, the applicant would offer a potential easement for a public trail to the SJRC along the existing 200-foot setback from the San Joaquin River providing the potential for the planned Parkway trails in the area, together with the offer of the trail easement at the Plant Site, to be extended an additional three miles.
Policy Oper.10: Encourage public-public and public-private partnerships with other agencies and organizations that can assist in funding, implementing, managing, and maintaining Parkway facilities and programs.	**Consistent:** The applicant would offer potential trail easements at the Plant Site and the Quarry Site.

4.11.3 Significance Criteria and Analysis Methodology

The project description was compared to the local governing plans that are applicable to the physical locations of the Plant Sit and Quarry Site. It was determined which policies within those plans are applicable to the proposed project. In this case, the project is an amendment to an existing operation and not a proposed new development. Therefore, only those policies where changes to the existing project that have the potential to be inconsistent with the local plans are listed in the analysis.

4.11.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to land use and planning if it would:

a) physically divide an established community; or

b) cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.11.3.2 Analysis Methodology

The above methodology was used to determine whether the project conflicts with the above significance criteria for land use polices as found in Appendix G of the CEQA Guidelines.

4.11.4 Project Impacts and Mitigation Measures

Impact 4.11-1: Physically Divide an Established Community

The physical division of an established community can occur when a physical feature (highway, wall, railroad track) is constructed or a means of access (bridge, road, trail) is removed that would limit mobility within the community.

The project sites are in a rural area near the unincorporated community of Friant, approximately 2 miles north of the Quarry Site and the Sumner Hill residential development across the San Joaquin River in Madera County. While there are rural residential developments scattered throughout the area, the project sites are not part of an established community. Much of the land surrounding the sites is open space within nature preserves and grazing land. Further, the proposed project involves improvements within two existing industrial facilities. The project would not construct any roads, walls, or other linear features that could impede vehicle, bicycle, or pedestrian mobility in the area. Similarly, the project would not involve the removal of any roads, bridges, trails, or other means of access in the area. As discussed in Section 4.17, "Transportation," the project would not interfere with existing or planned transit, bicycle, or pedestrian facilities or plans (see Impact 4.17-1) and would add a negligible number of new daily vehicle trips on local roadways (see Impact 4.17-2).

For these reasons, the proposed project would not physically divide an established community. There would be no impact.

Level of Significance: No Impact.

Mitigation Measure: None required.

Impact 4.11-2: Conflict with Land Use Plans, Policies, and Regulations

Fresno County General Plan

As demonstrated in Table 4.11-1, the proposed project would be consistent with each of the applicable Fresno County General Plan goals and policies.

Madera County General Plan

The Quarry Site and Plant Site are wholly located within Fresno County and are not subject to the policies of the Madera County General Plan. However, given the location of the project sites across the San Joaquin River from and within view of development within Madera County, Table 4.11-1 provides analysis of the projects consistency with certain policies related to aesthetics and visual resources. As demonstrated in the table, the project would comply with each applicable policy and there would be no conflict with the Madera County General Plan.

Fresno County Zoning Ordinance

As described previously, both the Quarry Site and the Plant Site are zoned by the Fresno County Zoning Ordinance as "AE-20" Exclusive Agriculture, 20-acre minimum parcel size. Surface mining operations and related facilities and activities are permitted in this zoning district subject to a CUP under the provisions of Section 858 of the Fresno County Zoning Ordinance. Surface mining operations at the Quarry Site and Plant Site are permitted through 2023 under multiple existing CUPs approved by Fresno County. The proposed project would allow for continued and expanded mining on the Quarry Site and Plant Site under a new CUP. Therefore, with project approval, the proposed actions would be consistent with the Fresno County Zoning Ordinance.

The Fresno County Board of Supervisors approved a General Plan Review and Comprehensive Zoning Ordinance Update on February 20, 2024. However, pursuant to Section 15125 of the CEQA Guidelines, this EIR evaluates the environmental setting as it existed at the time the NOP was published (June 5, 2020). While this DEIR considers the previous version of the zoning ordinance, the proposed project would be required to comply with all applicable zoning regulations.

Fresno County Surface Mining and Reclamation Ordinance

As discussed in Table 4.11-1, the existing quarry and the proposed project were designed and operated in compliance with the Fresno County Surface Mining and Reclamation Ordinance. Specifically, the ordinance requires approval of a CUP, Mining and Reclamation Plan, and Financial Assurances for all surface mining operations in the County and outlines the submission requirements and processing procedures for each.

The ordinance also establishes standards for surface mining operations and reclamation including requirements for annual inspections and reporting. The proposed project requests approval of a new CUP, Mining and Reclamation Plan, and Financial Assurances for the continued operation and expansion of the existing mining operation. Under the proposed project, the quarry would continue to operate in compliance with the Fresno County Surface Mining and Reclamation Ordinance and would be subject to annual inspections and reporting.

The proposed project would not result in conflicts with any land use plan, policy, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. This impact would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

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4.12—MINERAL RESOURCES

This section of the Draft EIR describes the mineral resources available that occur in the vicinity of the Rockfield Quarry; summarizes applicable jurisdictional laws and regulations associated with mineral resources; and presents the significance criteria and thresholds for the evaluation of potential impacts. This section then describes analysis methodologies and identifies the potential impacts related to mineral resources of the proposed project.

4.12.1 Environmental Setting

The environmental setting for this analysis includes the Plant Site, Quarry Site, and adjacent lands. This section first describes the mineral resource designations of the proposed project sites, and then outlines any protected mineral resources on or near the project sites.

Mineral Resource Designations

An objective of the Surface Mining and Reclamation Act (SMARA) is to create a mineral lands inventory by designating certain areas of California as being important for the production and conservation of existing and future supplies of mineral resources. Pursuant to Section 2790 of SMARA, the State Mining and Geology Board has designated certain mineral resource areas to be of regional significance.

In 1986, the State of California classified the aggregate resources in the San Joaquin River area within which the Plant Site and Quarry Site are located as MRZ-2 (DOC and DMG 1986).

In 1986 and 1999, the State of California included the Quarry Site and a small portion of the Plant Site in the classification of the aggregate resources in the San Joaquin River area as MRZ-2 (areas where a high likelihood exists that significant aggregate deposits are present) (California Department of Conservation, Division of Mines and Geology 1986 and 1999). Fresno County incorporated the MRZ-2 classification into the Mineral Resources Unit of the Open Space/Conservation Element of the General Plan in 1987. Also in 1988, the State included both the Quarry Site and a portion of the Plant Site as part of the lands designated as having construction grade aggregate deposits that are of regional significance (California Department of Conservation, Division of Mines and Geology 1988). This designation indicates that a high likelihood exists that significant aggregate deposits are present.

The State of California classified the majority of the Plant Site as MRZ-1 (areas where adequate information indicates no significant mineral resources are present) (California

Department of Conservation, Division of Mines and Geology 1986 and 1999). However, as described in the SMRP, the applicant's borings of the Plant Site indicate that, although much of the site has been mined and backfilled to depths of between 5 and 32 feet bgs, there are recoverable sand and gravel resources to a depth of about 85 feet bgs.

SMARA requires that a lead agency's land use decisions involving the designated area be made in accordance with its mineral resource management policies, and that the lead agency consider the importance of the mineral resource to the region as a whole and not just the lead agency's area of jurisdiction.

4.12.2 Regulatory Setting

No federal regulations relevant to mineral resources apply to the project. Relevant state and local programs and policies are discussed below.

4.12.2.1 State

Surface Mining and Reclamation Act

The California Surface Mining and Reclamation Act (SMARA) of 1975, was enacted in response to land use conflicts between urban growth and essential mineral production. SMARA requires the State Geologist to classify land into Mineral Resource Zones (MRZs) based on the known or inferred mineral resource potential of that land. The process is based solely on geology, without regard to existing land use or land ownership. The primary goal of mineral land classification is to help ensure that the mineral resource potential of lands is recognized and considered in the land use planning process. Local governments must consider this information before land with important mineral deposits is committed to land uses incompatible with mining. The Plant Site and Quarry Site are classified as MRZ-2, which is defined as "areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood of their presences exists."

4.12.2.2 Local

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) Open Space & Conservation Element includes the following policies that apply to the proposed project:

Open Space and Conservation Element

Section C. Mineral Resources

Goal OS-C: To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the

reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.

Policy OS-C.1: The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.

Policy OS-C.2: The County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2). (See Figures 7-9, 7-10, and 7-11 in the Fresno County General Plan Background Report.)

Policy OS-C.3: The County shall require that the operation and reclamation of surface mines be consistent with the State Surface Mining and Reclamation Act (SMARA) and special zoning ordinance provisions.

Policy OS-C.4: The County shall impose conditions as necessary to minimize or eliminate the potential adverse impact of mining operations on surrounding properties.

Policy OS-C.5: The County shall require reclamation of all surface mines consistent with SMARA and the County's implementing ordinance.

Policy OS-C.9: The County shall require that any proposed changes in land use within areas designated MRZ-2 along the San Joaquin and Kings Rivers comply with the provisions of the State Surface Mining and Reclamation Act (SMARA).

Policy OS-C.10: The County shall not permit land uses that threaten the future availability of the mineral resource or preclude further extraction of those resources.

Fresno County Zoning Ordinance

The existing zoning designations for the project sites are both AE-20 (Exclusive Agriculture, 20-acre minimum parcel size). As described in Section 816 of the Zoning Ordinance, this zone is intended to be an exclusive district for agriculture and for those uses that are necessary and an integral part of the agricultural operation. Surface mining operations and related facilities and activities are permitted in the AE-20 district subject to a CUP and the provisions of Section 858 of the Zoning Ordinance.

Mineral resources are specifically identified in Section 858 as "valuable community assets which must be safeguarded against preemption by competing or conflicting land uses." The County also discusses that mineral deposits are frequently located in areas that are also suited for other types of development or are in areas characterized by significant

natural resources. Therefore, care must be taken to ensure that mineral resources are recovered efficiently and safely, with minimal disruption to surrounding land uses and environmental values, and that sites are reclaimed to a usable condition that is readily adaptable for alternative land uses.

4.12.3 Significance Criteria and Analysis Methodology

4.12.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to mineral resources if it would:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

4.12.3.2 Analysis Methodology

Mineral resources located in the unincorporated area of Fresno County, the proposed Surface Mining and Reclamation Plan, and Conditional Use Permit application materials were reviewed to determine the proposed project's potential impacts to mineral resources. Potential impacts related to mineral resources were determined qualitatively by assessing proposed activities in light of the environmental and regulatory settings.

4.12.4 Project Impacts and Mitigation Measures

Impact 4.12-1: Loss of Availability of a Known Mineral Resource or Locally Important Mineral Resource Recovery Site Delineated on a Local General Plan, Specific Plan or Other Land Use Plan

The project would accommodate the already permitted ability to continue mining by amending existing permits to expand mining operations and revising the existing reclamation plan. The project would continue to allow for the production of mineral resources at the project sites, thereby making them available for beneficial use within Fresno County and surrounding areas. The project's utilization and development of these mineral resources is not considered adverse in terms of the County's CEQA review because the site is being used for the extraction of mineral resources. The proposed end use of open space and riparian and wildlife habitat would not preclude future additional mineral extraction on the site if the applicant and the County deem such additional extraction to be desirable and if the necessary reclamation plan amendment and associated CEQA review were conducted. Thus, impacts to mineral resources would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

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4.13—NOISE

This section of the Draft EIR describes existing noise and vibration conditions near the Quarry Site and Plant Site (collectively "project sites"), summarizes applicable jurisdictional laws and regulations associated with noise and vibration, and presents the significance criteria and thresholds for the evaluation of noise and vibration-related environmental impacts. This section then describes analysis methodologies and identifies the potential noise and vibration effects of the proposed project. Measures to mitigate potential noise and vibration impacts are recommended, as appropriate.

The information in this section is based on Applicant-prepared studies, peer review comments, and publicly available sources. The Applicant-prepared studies used are:

- *Environmental Noise and Vibration Assessment, CEMEX Rockfield Modification Project, Fresno County, California*. Prepared by Bollard Acoustical Consultants, Inc. (BAC). July 26, 2021. (Appendix H-1, "Environmental Noise and Vibration Assessment")
- *Addendum Letter for CEMEX Rockfield Modification Project, Fresno Co., CA*. Prepared by BAC. July 1, 2021. (Appendix H-2, "Noise and Vibration Assessment Addendum")
- *Blast Impact Analysis, CEMEX-Rockfield Quarry, Fresno, California.* Prepared by Vibra-Tech Engineers, Inc. (Vibra-Tech). September 9, 2019. (Appendix H-3, "Blast Impact Analysis")
- *CEMEX Rockfield Modification Project, Blasting Induced Ground Vibration Effects on Structural Integrity of Nearby San Joaquin River Embankments, Fresno, California.* Prepared by Vibra-Tech. May 18, 2020. (Appendix H-4, "Blasting Effects on San Joaquin River Embankments")
- *Geophysical Investigation (Seismic Refraction and MASW Surveys)*. CEMEX Rockfield Quarry Operation, Fresno County, California. Prepared by Vibra-Tech. September 5, 2019. (Appendix H-5, "San Joaquin River Embankments Geophysical Investigation")
- *Blasting Protocols, CEMEX Rockfield Quarry, Fresno, California.* Prepared by Vibra-Tech. October 27, 2020. (Appendix H-6, "Blasting Protocols")

The peer review comments are:

- *Blast-Induced Vibration Impact Peer Review of the Quarry Site, Proposed Cemex Rockfield Quarry Modification Project, Fresno County, California*. Prepared by Golder Associates, Inc. (Golder). Updated December 11, 2024. (Appendix H-7, "Blast Impact Analysis Peer Review")

The *Environmental Noise and Vibration Assessment* (Noise Assessment) was peer-reviewed by County-retained Saxelby Acoustics in July 2020. The peer review letter report and Saxelby Acoustics' comments are on file with the County. The Noise Assessment was revised by BAC in response to the comments in September 2020. Additional comments were provided by Benchmark Resources in May 2021. The Noise Assessment was further revised by BAC and an addendum letter was prepared in response to the comments in July 2021.

The *Blast Impact Analysis* and *Blasting Induced Ground Vibration Effects on Structural Integrity of Nearby San Joaquin River Embankments* were peer-reviewed by County-retained Golder in December 2020. The *Blast-Induced Vibration Impact Peer Review of the Quarry Site* (Blast Impact Analysis Peer Review) prepared by Golder did not recommend any revisions to the original *Blast Impact Analysis*, but expanded on the analysis to address potential flyrock impacts and identified mitigation measures to address potential blast impacts, which the *Blast Impact Analysis* did not include. The *Blasting Protocols* document was then developed in October 2020 to comply with the recommended mitigation. Minor updates were made to the Blast Impact Analysis Peer Review in December 2024.

4.13.1 Environmental Setting

4.13.1.1 Technical Background

Acoustic Fundamentals

Acoustics is the scientific study that evaluates perception, propagation, absorption, and reflection of sound waves. Sound is a mechanical form of radiant energy, transmitted by a pressure wave through a solid, liquid, or gaseous medium. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise; consequently, the perception of sound is subjective in nature, and can vary substantially from person to person. Common sources of environmental noise and relative noise levels are shown in Table 4.13-1, "Typical Noise Levels Associated with Common Activities."

Table 4.13-1
Typical Noise Levels Associated with Common Activities

Common Outdoor Activities	Noise Level *(dBA)*	Common Indoor Activities
	110	Rock Band
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet

Common Outdoor Activities	Noise Level *(dBA)*	Common Indoor Activities
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher (in next room)
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing (Healthy)	0	Lowest Threshold of Human Hearing (Healthy)

Table Source: Table 2-5 of Caltrans 2013.

A sound wave is initiated in a medium by a vibrating object (e.g., vocal cords, the string of a guitar, the diaphragm of a radio speaker). The wave consists of minute variations in pressure, oscillating above and below the ambient atmospheric pressure. The number of pressure variation cycles occurring per second is referred to as the frequency of the sound wave and is expressed in hertz, which is equivalent to one complete cycle per second.

Directly measuring sound pressure fluctuations would require the use of a very large and cumbersome range of numbers. To avoid this and have a more useable numbering system, the decibel (dB) scale was introduced. The sound level expressed in decibels (dB) is the logarithmic ratio of two like pressure quantities, with one pressure quantity being a reference sound pressure and the second pressure being that of the sound source of concern. For sound pressure in air, the standard reference quantity is generally considered to be 20 micropascals, which directly corresponds to the threshold of human hearing. The use of the decibel is a convenient way to handle the million-fold range of sound pressures to which the human ear is sensitive. A decibel is logarithmic; it does not follow normal algebraic methods and cannot be directly added. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a 100-fold increase in acoustical energy.

The loudness of sound perceived by the human ear depends primarily on the overall sound pressure level and frequency content of the sound source. The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. The standard weighting networks are identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels (dBA). For this reason, the dBA can be used to predict community response to noise from the environment, including noise from transportation and stationary sources.

Noise can be generated by a number of sources, including mobile sources (transportation) such as automobiles, trucks, and airplanes and stationary sources (non-transportation) such as construction sites, machinery, and commercial and industrial operations. As acoustic energy spreads through the atmosphere from the source to the receiver, noise levels attenuate (decrease) depending on ground absorption characteristics, atmospheric conditions, and the presence of physical barriers (e.g., walls, building façades, berms). Noise generated from mobile sources generally attenuates at a rate of 3 dBA (typical for hard surfaces, such as asphalt) to 4.5 dBA (typical for soft surfaces, such as grasslands) per doubling of distance, depending on the intervening ground type. Stationary noise sources spread with more spherical dispersion patterns that attenuate at a rate of 6 to 7.5 dBA per doubling of distance for hard and soft sites, respectively.

Atmospheric conditions such as wind speed, turbulence, temperature gradients, and humidity may additionally alter the propagation of noise and affect levels at a receiver. Furthermore, the presence of a large object (e.g., barrier, topographic features, and intervening building façades) between the source and the receptor can provide significant attenuation of noise levels at the receiver. The amount of noise level reduction or "shielding" provided by a barrier primarily depends on the size of the barrier, the location of the barrier in relation to the source and receivers, and the frequency spectra of the noise. Natural barriers such as earthen berms, hills, or dense woods as well as man-made features such as buildings, concrete berms and walls may be effective barriers for the reduction of source noise levels.

Noise Descriptors

The intensity of environmental noise levels can fluctuate greatly over time and as such, several different descriptors of time-averaged noise levels may be used to provide the most effective means of expressing the noise levels. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment near the

receptor(s). Noise descriptors most often used to describe environmental noise are defined below.

L_{max} (Maximum Noise Level): The maximum instantaneous noise level during a specific period of time.

L_x (Statistical Descriptor): The noise level exceeded "X%" of a specific period of time. For example, L50 is the median noise level, or a level exceeded 50% of the time.

L_{eq} (Equivalent Noise Level): The average noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the L_{eq}. In noise environments determined by major noise events, such as aircraft over-flights, the L_{eq} value is heavily influenced by the magnitude and number of single events that produce the high noise levels.

L_{dn} (Day-Night Average Noise Level): The 24-hour L_{eq} with a 10-dBA "penalty" for noise events that occur during the noise-sensitive hours between 10 p.m. and 7 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours, and this generates a higher reported noise level when determining compliance with noise standards. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.

CNEL (Community Noise Equivalent Level): The CNEL is similar to the L_{dn} described above, but with an additional 5-dBA "penalty" added to noise events that occur during the noise-sensitive hours between 7 p.m. and 10 p.m., which are typically reserved for relaxation, conversation, reading and television. When the same 24-hour noise data are used, the reported CNEL is typically approximately 0.5 dBA higher than the L_{dn}.

Community noise is commonly described in terms of the ambient noise level which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent sound level (L_{eq})which corresponds to the steady-state A-weighted sound level containing the same total energy as the time-varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptors such as L_{dn} and CNEL, as defined above, and shows very good correlation with community response to noise. Use of these descriptors along with the maximum noise level occurring during a given time period provides a great deal of information about the ambient noise environment in an area.

Negative Effects of Noise on Humans

Excessive and chronic exposure to elevated noise levels can result in auditory and non-auditory effects on humans. Auditory effects of noise on people are those related to temporary or permanent hearing loss caused by loud noises. Non-auditory effects of exposure to elevated noise levels are those related to behavioral and physiological effects. The non-auditory behavioral effects of noise on humans are associated primarily with the subjective effects of annoyance, nuisance and dissatisfaction, which lead to interference with activities such as communications, sleep and learning. The non-auditory physiological health effects of noise on humans have been the subject of considerable research attempting to discover correlations between exposure to elevated noise levels and health problems, such as hypertension and cardiovascular disease. The majority of research infers that noise-related health issues are predominantly the result of behavioral stressors and not a direct noise-induced response. The extent to which noise contributes to non-auditory health effects remains a subject of considerable research, with no definitive conclusions.

The degree to which noise results in annoyance and interference is highly subjective and may be influenced by several non-acoustic factors. The number and effect of these non-acoustic environmental and physical factors vary depending on individual characteristics of the noise environment such as sensitivity, level of activity, location, time of day, and length of exposure. One key aspect in the prediction of human response to new noise environments is the individual level of adaptation to an existing noise environment. The greater the change in the noise levels that are attributed to a new noise source, relative to the environment an individual has become accustomed to, the less tolerable the new noise source will be to an individual.

With respect to how humans perceive and react to changes in noise levels, a 1 dBA increase is generally imperceptible outside of a laboratory environment, a 3 dBA increase is barely perceptible, a 6 dBA increase is clearly noticeable, and a 10-dBA increase is subjectively perceived as approximately twice as loud (Charles M. Salter Associates 1998). These subjective reactions to changes in noise levels were developed on the basis of test subjects' reactions to changes in the levels of steady-state, pure tones or broad-band noise and to changes in levels of a given noise source. Perception and reaction to changes in noise levels in this manner is thought to be most applicable in the range of 50 to 70 dBA, as this is the usual range of voice and interior noise levels.

Vibration Fundamentals

Vibration is similar to noise in that it is a pressure wave traveling through an elastic medium involving a periodic oscillation relative to a reference point. Vibration is most

commonly described in respect to the excitation of a structure or surface, such as in buildings or the ground. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions, impacts). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal, or the quantity of displacement measured from peak to trough of the vibration wave. RMS is defined as the positive and negative statistical measure of the magnitude of a varying quantity. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a period of one second. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (Federal Transit Administration [FTA] 2018). PPV and RMS vibration velocity are nominally described in terms of inches per second (in/sec). However, as with airborne sound, vibration velocity can also be expressed using decibel notation as vibration decibels (VdB). The logarithmic nature of the decibel serves to compress the broad range of numbers required to describe vibration and allow for the presentation of vibration levels in familiar terms.

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. Human response to vibration has been found to correlate well to average vibration amplitude; therefore, vibration impacts on humans are evaluated in terms of RMS vibration velocity.

Typical outdoor sources of perceptible groundborne vibration include construction equipment, steel-wheeled trains, and vehicles on rough roads. Although the effects of vibration may be imperceptible at low levels, effects may result in detectable vibrations and slight damage to nearby structures at moderate and high levels, respectively. At the elevated levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in damage to structural components. Table 4.13-2, "Typical Levels of Groundborne Vibration," identifies some common sources of vibration, corresponding VdB levels, and associated human perception and potential for structural damage.

Table 4.13-2
Typical Levels of Groundborne Vibration

Human/Structural Response	Velocity Level RMS (VdB)	Typical Events (50-foot setback)
Threshold, minor cosmetic damage	100	Blasting, pile driving, vibratory compaction equipment
	95	Heavy tracked vehicles (Bulldozers, cranes, drill rigs)
Difficulty with tasks such as watching a video or reading a computer screen	90	Commuter rail, upper range
Residential annoyance, infrequent events	80	Rapid transit, upper range
Residential annoyance, occasional events	75	Commuter rail, typical bus or truck over bump or on rough roads
Residential annoyance, frequent events	72	Rapid transit, typical
Approximate human threshold of perception to vibration	65	Buses, trucks, and heavy street traffic
	60	Background vibration in residential settings in the absence of activity
Lower limit for equipment ultra-sensitive to vibration	50	

Table Source: Figure 7-3 of FTA 2006.

Blasting

The *Blast Impact Analysis* (Appendix H-3) provides information on the characteristics of blasting. The purpose of blasting is to break off and fracture bedrock into pieces that can fit into a rock crusher. When a blast hole is filled with explosive material, which is then detonated, the explosion produces a high temperature, high-pressure gas. This gas pressure, known as the "detonation pressure", crushes the rock adjacent to the borehole. The detonation pressure rapidly dissipates, consuming approximately 10% to 15% of the energy available in the explosive. The remaining energy produces a second, lower pressure gas, known as the "explosion pressure." Most of the work done by the explosive is done by the explosion pressure. The explosion pressure expands the cracks made by the detonation pressure and pushes the fractured rock toward the free face. This entire process occurs within a few hundredths of a second after the detonation and takes place within about twenty feet of a typical quarry blast hole. The energy of the explosion is determined by the total weight of explosives detonated within a certain period of time. The volume of rock that is permanently displaced (fractured) is a cone with its apex at the bottom of the borehole and is based on the surface of the ground. The radius of the base is equal to the depth of the borehole. Beyond this cone-shaped volume, no permanent deformation (inelastic movement) of the rock occurs, and elastic waves are generated.

It should be noted that all quarry blasts today consist of many charges detonated several hundredths or thousandths of a second apart. Research has shown that several charges detonated only a few thousandths of a second apart not only produce less ground vibration but are also more effective at fracturing and moving rock than a simultaneous detonation of all charges. The interval at which charges are denotated is called the "delay interval."

The ground vibrations that homeowners may feel are not caused by the fracturing of rock. Blast-induced ground vibrations are primarily the result of the detonation pressure acting on the rock around the borehole and the explosion gas pressure pushing the fractured rock away from the bedrock toward the open pit. The application of this large force against the bedrock, followed by its subsequent release causes the bedrock to vibrate, and the vibration is transmitted into the ground surrounding it. This transmission of vibration is called "propagation."

The propagation of the ground vibration continues away from the blast location in all directions, similar to ripples in a pond, which move away from the initial disturbance. The ripples in the pond, like ground vibration, are examples of elastic vibration. Elastic vibration means that the material never moves very far from its original position while it is vibrating, and once the vibration event is over, the material will be in its original position and condition. Unlike the ripples in the pond, the motion of the ground is so small it cannot be detected visually. Outside of a quarry, the ground rarely moves farther than the thickness of a sheet of paper before returning to its original position, and it may do so faster than the eye can sense. As the ground vibrations propagate further away from the source, the energy is dissipated. When the energy dissipates, ground vibration amplitude decreases, until eventually the ground vibration falls below perceptible levels. The rate at which ground vibration amplitude decreases as it propagates away from the blast location is called "seismic attenuation." The rate of attenuation is specific to the location of the mining operation and varies based upon the site conditions. Seismic attenuation has been studied extensively and found to occur geometrically. A geometric reduction in ground vibration means that ground vibration amplitude decreases very quickly near the source but very slowly far from the source. As a result, almost all of the ground vibration energy is dissipated within the quarry, but the small amount of energy remaining may produce perceptible vibrations at some distance. Seismographs are used to measure the vibrations and ensure that the permissible levels are not exceeded. The seismograph may measure how far the ground moves from its original position (displacement), how fast it moves (velocity), or how fast the velocity changes (acceleration).

Airblast may also be produced by blasting. Airblast is an airborne shock wave resulting from the detonation of explosives and can be measured in units of pressure (pounds per square inch, etc.) or sound intensity (dB). Airblast occurs when there is a sudden change in air pressure as a result of blasting, and it may or may not be audible to the human ear. Window damage commonly is the first and only damage from airblast. Excessive airblasts can result from excessive explosive loads. Seismographs are equipped with microphones and can measure airblasts by measuring changes in air pressure.

Changes in air pressure due to blasting, like wind, occur very rapidly, resulting in different pressures on the inside and outside of a structure. Changes in air pressure due to wind are many times greater than the changes in air pressure produced by blasting. This is why a gust of wind may push a garbage can down the street, but the airblast from a quarry cannot. The frequency of the changes in air pressure produced by wind is much lower than the frequency of the air pressure wave produced by blasting. Two important effects can be traced to this difference in frequency. First, wind remains inaudible, while air overpressure from blasting may rumble or boom. Second, higher frequency changes in air pressure due to blasting means forces on the structure's exterior change quickly. A windowpane may be alternately pushed and pulled fast enough to make it rattle as a result of a blast. Wind force, on the other hand, does not change direction quickly. Wind can therefore push or pull on a windowpane with a much greater force without producing audible sounds.

Most air overpressures from blasting are measured in thousandths or ten thousandths of pounds per square inch (psi). Rather than reporting air overpressures in psi, most regulations specify decibels (dB). Since a decibel is a measure of change, it must be with respect to some value. The reference pressure for air overpressure monitoring is 2.9×10^{-9} psi. A small change in decibels can represent a very large change in pressure. Doubling of the overpressure in psi yields a 6 dB increase; a tenfold increase in overpressure equates to a 20 dB increase.

4.13.1.2 Sensitive Receptors in the Project Vicinity

Nearest Noise and Vibration Sensitive Receptors

The nearest sensitive receptors to both the Plant Site and Quarry Site are single family residences. These receptors, as well as the approximate setbacks between the major roadways utilized by project traffic and the receptors, were identified utilizing aerial imagery and site inspections (Appendix H-1). A total of five representative sensitive residential receptor locations were identified for the Plant Site and 15 representative residential sensitive receptor locations were identified in the general vicinity of the Quarry Site. Those receptors are shown on Figure 4.13-1, "Nearest Sensitive Receptors to

Plant Site," and Figure 4.13-2, "Nearest Sensitive Receptors to Quarry Site." Note that a different group of receptors were identified in the *Blast Impact Analysis* (Appendix H-3) because of different potential impacts related to blast, as described in the "Nearest Blasting Vibration Sensitive Receptors," subsection below.

In addition to the residential receptors in the general vicinity of the Plant Site and Quarry Site, there are also sensitive residential receptors located adjacent to the roadways that would be utilized by project traffic. Those roadways, as identified in the Traffic Impact Study (Appendix I-1) consist of the following:

- Friant Road
- Willow Avenue
- Highway 145
- Highway 41
- North Fork Road/Road 206

The trip distribution percentages of project-generated traffic along these roadways are shown on Figure 4.17-1, "Traffic Study Intersections and Project Trip Distribution Percentages," in Section 4.17, "Transportation," of this Draft EIR. The density of residential and other sensitive uses along these project roadways varies considerably, with the greatest concentration of residences located along Friant Road between North Willow Avenue and Audubon Drive. These residences are typically set back approximately 100 feet or more from the centerline of Friant Road and there are extensive sound walls along this portion of Friant Road. Figure 4.13-3, "Existing Sound Wall Construction Along North Friant Road," provides an example of such sound wall construction along Friant Road.

In addition to the residences located along Friant Road, there are several existing residences located adjacent to Highway 145, between Roads 26 and 38, and between El Camino to the Madera city limits. The majority of these residences are located 100 feet or more from the centerline of Highway 145.

Residences adjacent to Highway 41 between Audubon Drive and SR 145 are all beyond 100 feet from the roadway centerline. Between the Plant Site and Quarry Site, there is a winery located approximately 160 feet to the west of the Friant Road centerline, and rural residences more than 300 feet from the Friant Road centerline. North of the Quarry Site, in the community of Friant, there are a few residences, and an apparent mobile home park located between 60 and 75 feet from the centerline of Friant Road.

With the exception of a mobile home park located 60 feet from the centerline of Friant Road (south of North Fork Road), the typical residential setback distance from the roadways that would be utilized by project traffic is approximately 100 feet or more. As a result, this analysis evaluates traffic noise levels at a standard reference distance of 100 feet from the roadway centerlines with the exception of the aforementioned mobile home park, where traffic noise levels were evaluated at a distance of 60 feet. Additional information on the traffic noise assessment methodology is provided in Section 4.13.3.3, "Analysis Methodology," below.

Nearest Blasting Vibration Sensitive Receptors

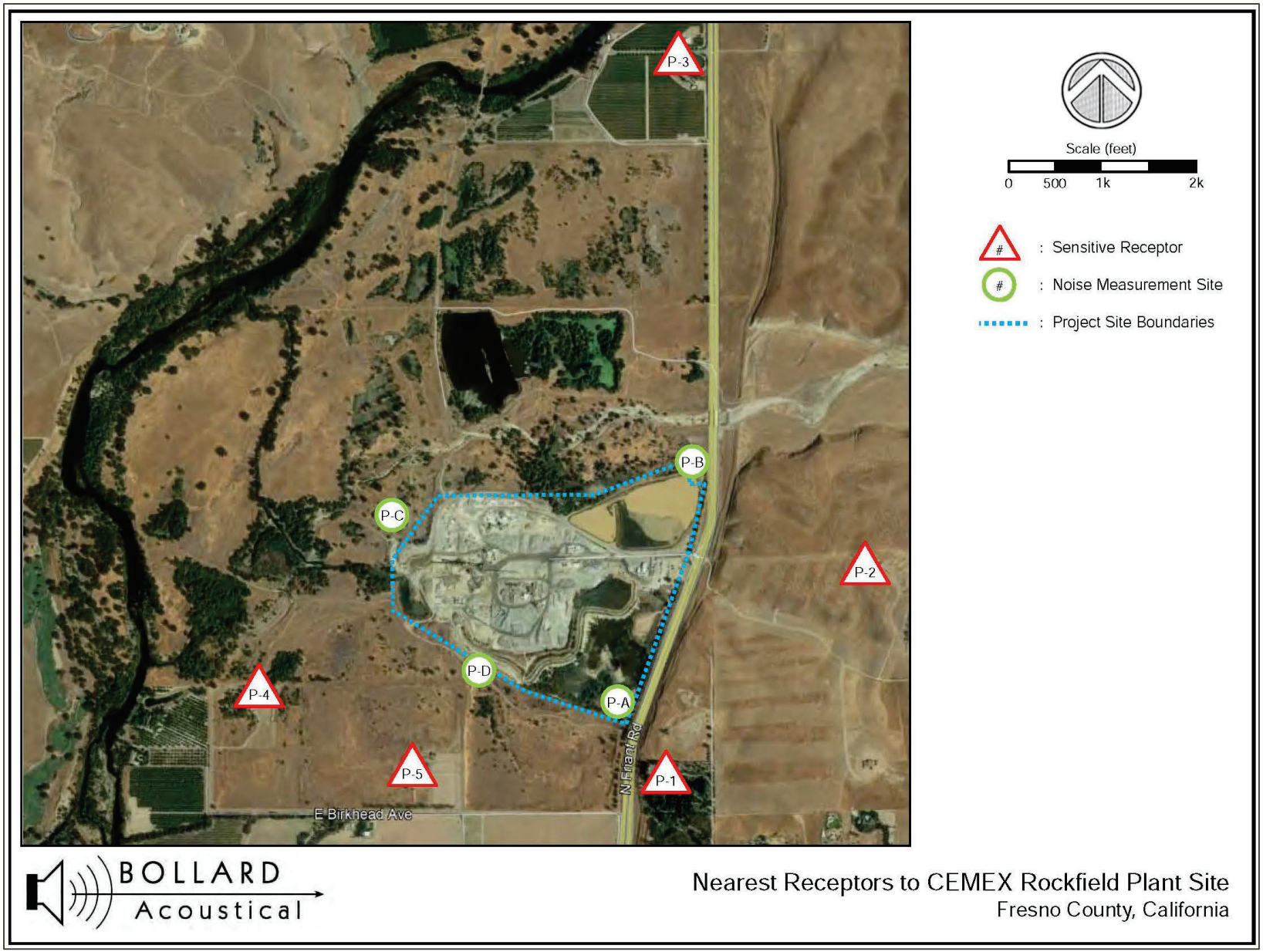
Sensitive receptors to blasting include residences but also include nearby groundwater wells and the San Joaquin River bank. Figure 4.13-4, "Blasting Vibration Receptors," is an aerial view of the site showing the property line and excavation edge along with the closest receptors (both residential/commercial and existing wells). The distances between the nearest residential receptors and the Quarry Site range from about 275 feet to 2,000 feet. In addition, there are several water supply wells located in close proximity to the proposed excavation area. The closest distance for a well is approximately 275 feet at the residence along the southern boundary of the Quarry Site. Other wells in close proximity are approximately 700 to 1,050 feet away.

In addition to the existing residential/commercial structures and wells, there is a concern that the blasting operation may have an effect on the slope stability of the San Joaquin River embankment, which is located directly west of the proposed mining area. It is estimated the closest proposed blasting area to the crest of the San Joaquin River embankment is approximately 170 feet. The reader is referred to Impact 4.13-6 for further discussion, below.

4.13.1.3 Plant Site Ambient Noise Environment

The existing ambient noise environment at the nearest receptors to the Plant Site is defined primarily by existing Friant Road traffic, and to a lesser extent by existing CEMEX excavation and processing operations and natural sounds (wind, birds, insects, etc.). To quantify the existing ambient noise environment in the vicinity of the Plant Site, long-term noise level measurements were conducted at the four locations shown as P-A, P-B, P-C, and P-D on Figure 4.13-1 during the 5-day period spanning February 29 through March 4, 2019.

As indicated on Figure 4.13-1, in some cases the ambient noise measurement locations were in relatively close proximity to the nearest sensitive receptors to the Plant Site and in some cases the ambient noise measurement sites were located further away from those receptors.



SOURCE: Bollard Acoustical Consultants, Inc. 2021a; arranged by Benchmark Resources in 2022

Nearest Sensitive Receptors to Plant Site
ROCKFIELD MODIFICATION PROJECT
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Figure 4.13-1

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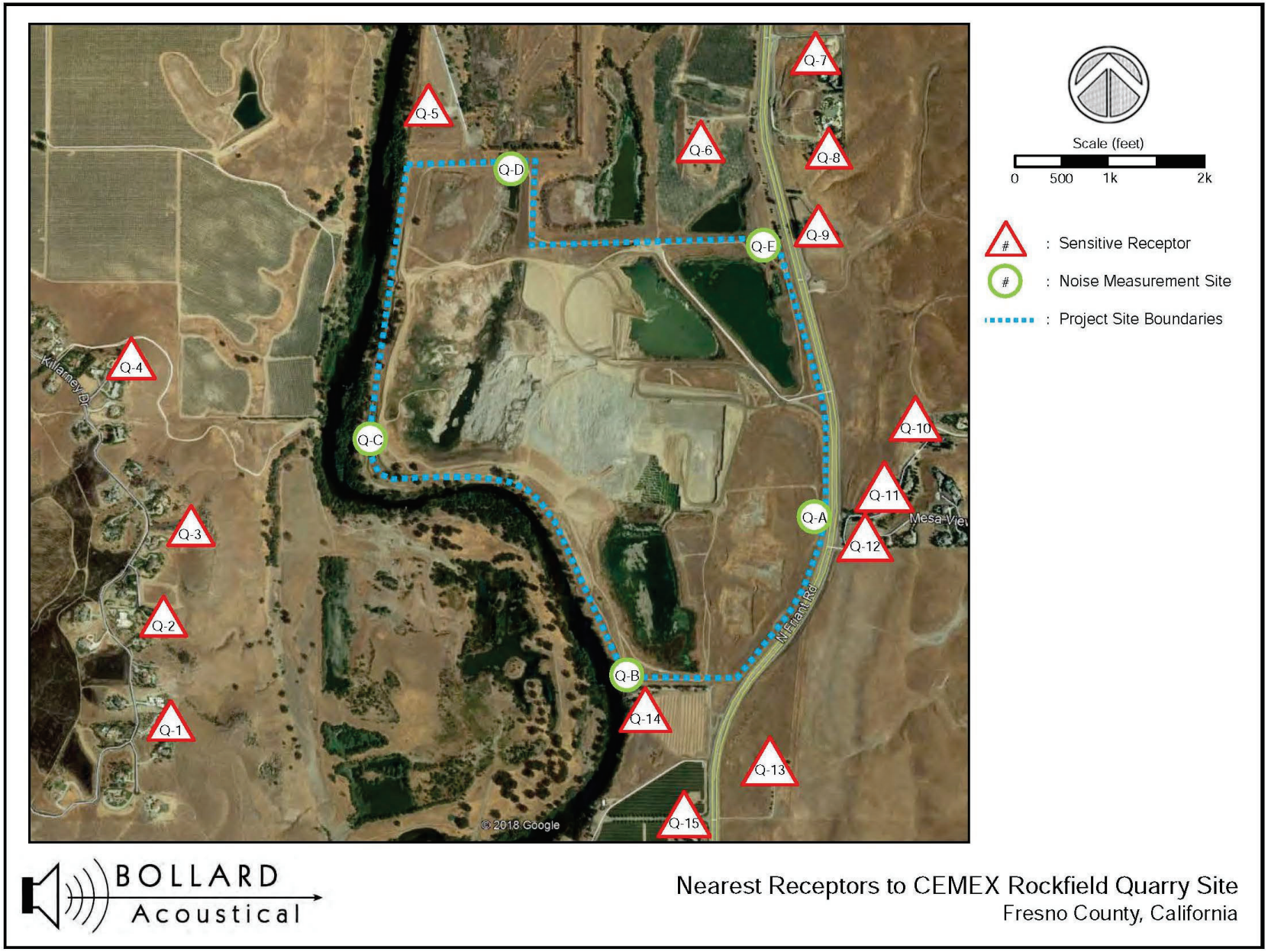

SOURCE: Bollard Acoustical Consultants, Inc. 2021a; arranged by Benchmark Resources in 2022

Nearest Sensitive Receptors to Quarry Site
ROCKFIELD MODIFICATION PROJECT
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Figure 4.13-2

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SOURCE: Bollard Acoustical Consultants, Inc. 2021a; arranged by Benchmark Resources in 2022

Existing Sound Wall Construction Along North Friant Road
ROCKFIELD MODIFICATION PROJECT
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Figure 4.13-3

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SOURCE: Vibra-Tech Engineers, 2019; arranged by Benchmark Resources in 2022

Blasting Vibration Receptors
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Figure 4.13-4

BENCHMARK RESOURCES

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Table 4.13-3, "Existing Ambient Noise Environment at Nearest Receptors to Plant Site," shows the existing ambient daytime (7 a.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) noise environment at each of the five sensitive receptors in the Plant Site vicinity following adjustments, as needed, to the ambient noise levels collected at the nearest representative measurement location. The adjustment methodology is described in the "Plant Site Ambient Noise Measurements" subsection of Section 4.13.3.3, below.

4.13.1.4 Quarry Site Ambient Noise Environment

The existing ambient noise environment in the immediate vicinity of the Quarry Site is defined by existing CEMEX excavation operations[1], traffic on Friant Road, and natural sounds (wind, birds, insects, etc.). To quantify the existing ambient noise environment in the vicinity of the Quarry Site, long-term noise level measurements were conducted at the five locations shown as Q-A, Q-B, Q-C, Q-D, and Q-E on Figure 4.13-2 during the 9-day period spanning January 24 through February 1, 2018.

As indicated on Figure 4.13-2, in some cases the ambient noise measurement locations were located in relatively close proximity to the nearest sensitive receptors to the Quarry Site and in some cases the ambient noise measurement sites were located further away from those receptors. Table 4.13-4, "Existing Ambient Noise Environment at Nearest Receptors to Quarry Site," shows the existing ambient daytime (7 a.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) noise environment at each of the 15 sensitive receptors in the Quarry Site vicinity following adjustments, as needed, to the ambient noise levels collected at the nearest representative measurement location. The adjustment methodology is described in the "Quarry Site Ambient Noise Measurements" subsection of Section 4.13.3.3, below.

[1] State CEQA Guidelines Section 15125 states that an EIR must provide a comparison of a project to the existing conditions on the project site as they existed at the time the Notice of Preparation (NOP) for the project is prepared. At the time the NOP for the proposed project was prepared, the Quarry was operating in accordance with its existing permits.

Table 4.13-3
Existing Ambient Noise Environment at Nearest Receptors to Plant Site

Receptor[1]	Ambient Site[2]	Ambient Offset[3]	Existing Average Daytime Noise Levels, dBA[4]					Existing Average Nighttime Noise Levels, dBA[5]				
			L_{max}	L(2.00)	L(8.00)	L(25.00)	L(50.00)	L_{max}	L(2.00)	L(8.00)	L(25.00)	L(50.00)
P-1	P-A	-6	69	61	58	54	50	67	59	56	51	45
P-2	P-B	-14	59	52	50	47	44	56	50	47	43	38
P-3	P-B	0	73	66	64	61	58	70	64	61	57	52
P-4	P-C	-3	59	50	46	43	40	56	48	44	40	37
P-5	P-D	-3	59	49	47	44	42	57	49	47	44	41

Table Source: Table 2 of Appendix H-1.
Table Notes:
1. The nearest representative receptors to the Plant Site are shown on Figure 4.13-1.
2. The ambient noise measurement sites are shown on Figure 4.13-1.
3. The ambient noise measurement results were adjusted by these offsets to account for the varying distances of Receptors P-1 and P-2 to Friant Road as compared to the distance from measurement sites P-A and P-B to Friant Road. The offsets for Sites P-4 and P-5 are based on the additional distance between the noise measurement sites and those receptors. Because the plant equipment was not operating at night, no offsets to the ambient noise levels were applied to nighttime conditions at Receptor Sites P-4 and P-5.
4. Daytime hours are 7 a.m. to 10 p.m. This data represent the average daytime noise levels in each category for the 5-day ambient noise monitoring period at the Plant Site locations.
5. Nighttime hours are 10 p.m. to 7 a.m. These data represent the average nighttime noise levels in each category for the 5-day ambient noise monitoring period at the Plant Site locations.

Table 4.13-4
Existing Ambient Noise Environment at Nearest Receptors to Quarry Site

Receptor[1]	Ambient Site[2]	Ambient Offset[3]	Existing Average Daytime Noise Levels, dBA[4]					Existing Average Nighttime Noise Levels, dBA[5]				
			L_{max}	L(2.00)	L(8.00)	L(25.00)	L(50.00)	L_{max}	L(2.00)	L(8.00)	L(25.00)	L(50.00)
Q-1	Q-C	0	59	51	48	45	43	54	49	47	46	44
Q-2	Q-C	0	59	51	48	45	43	54	49	47	46	44
Q-3	Q-C	0	59	51	48	45	43	54	49	47	46	44
Q-4	Q-C	0	59	51	48	45	43	54	49	47	46	44
Q-5	Q-D	0	59	51	47	44	41	57	52	50	47	45
Q-6	Q-E	-13	66	59	56	53	51	65	58	55	52	48
Q-7	Q-E	-13	66	60	57	54	51	66	59	56	52	49
Q-8	Q-E	-11	68	61	59	56	53	67	61	57	54	51

Receptor[1]	Ambient Site[2]	Ambient Offset[3]	Existing Average Daytime Noise Levels, dBA[4]					Existing Average Nighttime Noise Levels, dBA[5]				
			L_{max}	L(2.00)	L(8.00)	L(25.00)	L(50.00)	L_{max}	L(2.00)	L(8.00)	L(25.00)	L(50.00)
Q-9	Q-E	-9	70	64	61	58	55	70	63	60	56	53
Q-10	Q-A	-13	67	62	60	57	53	66	61	59	54	47
Q-11	Q-A	-10	70	65	63	61	57	69	65	62	57	50
Q-12	Q-A	-8	72	67	65	62	58	71	66	64	59	52
Q-13	Q-A	-11	69	64	62	60	55	68	64	61	56	49
Q-14	Q-B	0	62	55	51	48	46	61	55	53	50	47
Q-15	Q-A	-5	76	71	69	66	62	75	70	68	63	56

Table Source: Table 1 of Appendix H-1.

Table Notes:

1. The nearest representative receptors to the Quarry Site are shown on Figure 4.13-2.
2. The ambient noise measurement sites are shown on Figure 4.13-2.
3. The ambient noise measurement results were adjusted by these offsets to account for the varying distances of Receptors Q-6 – Q-13 & Q-15 to Friant Road as compared to the distance from measurement sites Q-A and Q-E to Friant Road.
4. Daytime hours are 7 am to 10 pm. This data represent the average daytime noise levels in each category for the nine-day ambient noise monitoring period at the Quarry Site locations.
5. Nighttime hours are 10 pm to 7 am. These data represent the average nighttime noise levels in each category for the nine-day ambient noise monitoring period at the Quarry Site locations.

4.13.1.5 Existing Traffic Noise Environment

The estimated existing traffic noise levels along the primary project-area roadways (shown on Figure 4.17-1) are included in Table 4.13-5, "Summary of Existing Traffic Noise Exposure for Local Area Roadways." The methodology for the development of these estimates is described in the "Existing Traffic Noise Methodology" subsection of Section 4.13.3.3, below.

The estimated traffic noise levels are predicted in terms of L_{dn} at a reference distance of 100 feet from the centerlines of the primary project-area roadways. The 100-foot distance was applied as most of the existing residences located along the roadways which will be utilized by the highest percentage of project traffic are approximately 100 feet or more from the roadway centerlines. An exception to the 100-foot modelling distance occurred at Intersection 3 (Friant Road south of North Fork Road), where a few existing residences were identified as close as 60 feet to the roadway centerline.

Table 4.13-5
Summary of Existing Traffic Noise Exposure for Local Area Roadways

Intersection[a]	Description	Direction[b]	L_{dn}, dBA 100-feet from Roadway Centerline[c]	Distance to L_{dn}, dBA Contours (feet)		
				70	*65*	*60*
1	SR 41 / Road 145	North	68	70	151	325
1	SR 41 / Road 145	East	62	28	60	129
1	SR 41 / Road 145	West	63	36	77	166
2	Road 206 / Road 145	South	62	28	60	128
2	Road 206 / Road 145	West	62	30	64	137
3	Friant Rd / North Fork Rd	North	60	22	48	104
3	Friant Rd / North Fork Rd	South	66[d]	31	66	143
3	Friant Rd / North Fork Rd	West	61	26	56	121
4	Friant Rd / Quarry Entrance	North	67	63	136	294
4	Friant Rd / Quarry Entrance	South	68	69	148	320
5	Friant Road / Plant Entrance	North	67	67	143	309
5	Friant Road / Plant Entrance	South	67	64	138	296
6	Friant Road / Willow Ave	North	67	64	139	298
6	Friant Road / Willow Ave	South	66	52	113	243
6	Friant Road / Willow Ave	East	62	29	63	137
7	Friant Rd / Copper River Dr	North	65	46	98	211
7	Friant Rd / Copper River Dr	South	67	59	126	272
8	Friant Rd / Copper Ave	North	67	59	127	273
8	Friant Rd / Copper Ave	South	68	73	158	340
9	Willow Ave / Copper Ave	North	62	29	62	135
9	Willow Ave / Copper Ave	South	63	33	71	153
10	Friant Rd / Lakeview Dr	North	68	72	155	335
10	Friant Rd / Lakeview Dr	South	68	78	168	363
11	Friant Rd / Champlain Dr	North	68	78	168	361
11	Friant Rd / Champlain Dr	South	69	82	177	381

Intersection[a]	Description	Direction[b]	L_{dn}, dBA 100-feet from Roadway Centerline[c]	Distance to L_{dn}, dBA Contours (feet)		
				70	*65*	*60*
12	Friant Rd / Ft. Washington Rd	North	69	81	175	378
12	Friant Rd / Ft. Washington Rd	South	71	111	240	517
13	Friant Rd / Shepherd Ave	North	71	111	240	516
13	Friant Rd / Shepherd Ave	South	72	127	273	589
13	Friant Rd / Shepherd Ave	East	62	27	59	127
14	Friant Rd / Audubon Dr	North	73	153	329	708
14	Friant Rd / Audubon Dr	South	71	114	245	528
15	Friant Rd / Fresno St	North	71	116	251	541
15	Friant Rd / Fresno St	South	71	122	263	567
15	Friant Rd / Fresno St	East	64	38	83	178

Source: Table 3 of Appendix H-1.
Notes:
a. The intersections are those identified in the Traffic Impact Study (Appendix I-1) and are shown on Figure 4.17-1.
b. The direction indicates whether the roadway segment is located north, south, east, or west of the study intersection.
c. All roadway segments except Intersection 3 South were modelled at 100 feet from the roadway centerline.
d. Intersection 3 South noise levels were modelled at a distance of 60 feet from the roadway centerline due to the presence of existing residences at that distance.

4.13.1.6 Baseline Vibration Environment

The existing ambient vibration environment at the borders of both the Plant Site and Quarry Site was subjectively evaluated by BAC staff as being imperceptible during field surveys despite operations occurring normally at both the Plant Site and Quarry Site. Nonetheless, short-term vibration measurements were conducted at the five Quarry Site noise measurement locations (locations Q-A, Q-B, Q-C, Q-D, and Q-E on Figure 4.3-2, "Detailed Model Receptor Locations," of Section 4.3, "Air Quality," of this Draft EIR). The purpose of these measurements was to establish the baseline vibration environment against which blasting-generated vibration could be compared. Vibration measurement equipment consisted of a Larson Davis Laboratories (LDL) Model LxT meter equipped with PCB Electronics velocity transducers.

Measured vibration levels around the perimeter of the Quarry Site were well below the threshold of human perception (65 VdB RMS). Specifically, average vibration levels at the 5 monitoring sites ranged from 23 to 39 VdB RMS.

4.13.2 Regulatory Setting

4.13.2.1 Federal

40 Code of Federal Regulation (CFR), Part 205(B)

Federal regulations establish noise limits for medium and heavy trucks weighing more than 4.5 tons (gross vehicle weight rating) under Title 40 of the Code of Federal Regulations (CFR), Section 205.50 et seq. Under this regulation, the truck pass-by noise

standard is 80 dBA at 15 meters from the vehicle pathway center line. These controls are implemented through regulatory controls on truck manufacturers.

Occupational Health and Safety Administration

Federal codes, primarily the Occupational Safety and Health Act of 1970 (OSHA), govern worker exposure to noise levels. These regulations would be applicable to all phases of the proposed project and are designed to limit worker exposure to noise levels of 85 dB or lower over an 8-hour period (29 CFR 1910.95). Additionally, this regulation also establishes maximum impulse or impact noise (e.g., blasting noise) of 140 dB peak sound pressure level, which is approximately the threshold of pain. Noise exposure of this type is dependent on work conditions and is addressed through a facility's Health and Safety Plan, as required under OSHA.

Office of Surface Mining Reclamation and Enforcement (OSMRE)

Currently, there are no federal or state mining regulations that specifically address potential blast-induced impacts at surface mines other than coal mines. However, the U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE) is responsible for administering the Surface Mining Control and Reclamation Act of 1977, and the OSMRE developed a *Blasting Guidance Manual* (OSMRE 1987). Although the manual was developed to provide guidance for blasting at surface coal mines, many of the principles and techniques to control adverse impacts of blasting contained in this document, and in the underlying regulations (30 CFR Part 816.61 to 816.68), are commonly applied to hard-rock surface mines.

OSRME addresses three primary blast-induced impacts: flyrock, airblasts, and ground vibrations. The *Blasting Guidance Manual* provides guidance for controlling adverse effects resulting from blasting and draws upon the performance standards for surface mines included in 30 CFR Parts 816.61, 62, 64, 66, 67, and 68.

4.13.2.2 State

California Noise Control Act

Sections 46000 to 46080 of the California Health and Safety Code codify the California Noise Control Act of 1973. The California Noise Control Act established the Office of Noise Control under the California Department of Health Services. The California Noise Control Act required that the Office of Noise Control adopt, in coordination with the Governor's Office of Planning and Research (OPR), provide guidelines for the preparation and content of noise elements for general plans. The most recent guidelines are contained in General Plan Guidelines, published by the OPR (2017). The document

provides guidelines for cities and counties to use in their general plans to reduce conflicts between land use and noise.

California Occupational Safety and Health Administration (Cal/OSHA) Regulations

Noise exposure of construction workers is regulated by the California Occupational Safety and Health Administration (Cal/OSHA). Title 8 of the California Code of Regulations (CCR), Sections 5095 et seq. (Control of Noise Exposure) sets noise exposure limits for workers and requires employers who have workers who may be exposed to noise levels above these limits to establish a hearing conservation program, make hearing protection available, and keep records of employee noise exposure measurements. The Cal/OSHA also requires backup warning alarms that activate immediately upon reverse movement on all vehicles that have a haulage capacity of 2.5 cubic yards or more (8 CCR Section 1592). The backup alarms must be audible above the surrounding ambient noise level at a distance of 200 feet. To meet this requirement, backup alarms are often designed to generate sound as loud as 82 to 107 dBA L_{max} at 4 feet (National Cooperative Highway Research Program [NCHRP] 1999).

4.13.2.3 Local

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) Health and Safety Element includes the following policies that apply to the proposed project:

Health and Safety Element

Section H. Noise

Goal HS-H: To protect residential and other noise-sensitive uses from exposure to harmful or annoying noise levels; to identify maximum acceptable noise levels compatible with various land use designations; and to develop a policy framework necessary to achieve and maintain a healthful noise environment.

Policy HS-H.1: The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.

Policy HS-H.4: So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where:

a. Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are "generally unacceptable" or higher,

according to the Figure HS-9: "Land Use Compatibility for Community Noise Environments."

b. Proposed projects are likely to produce noise levels exceeding the levels shown in the County's Noise Control Ordinance at existing or planned noise-sensitive uses.

Policy HS-H.5: Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis of such measures upon site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The county shall consider the use of noise barriers, such as sound walls, as a means of achieving the noise standards after other design-related noise mitigation measures have been evaluated or integrated into the project.

Policy HS-H.6: The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.

Policy HS-G.8: The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, "Land Use Compatibility for Community Noise Environments."

Policies HS-H.4 and HS-H.8 refer to "Figure HS-9" and "Chart HS-1," which provide noise compatibilities for various land use categories. The information in Chart HS-1 of the *Fresno County General Plan* is provided in Table 4.13-6, "Land Use Compatibility for Community Noise Exposure."

Table 4.13-6
Land Use Compatibility for Community Noise Exposure

Land Use Category	Noise Exposure Level, Ldn or CNEL (dBA)						
	55	*60*	*65*	*70*	*75*	*80*	
Residential: Low Density Family, Duplex, and Mobile Homes							
Residential: Multiple Family							

Land Use Category	Noise Exposure Level, Ldn or CNEL (dBA)						
	55	*60*	*65*	*70*	*75*	*80*	
Transient Lodging: Motels and Hotels							
Schools, Libraries, Churches, Hospitals, and Nursing Homes							
Auditoriums, Concert Halls, and Amphitheaters							
Sports Arenas and Outdoor Spectator Sports							
Playgrounds and Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, and Cemeteries							
Office Buildings: Businesses, Commercial, and Professional							
Industrial, Manufacturing, Utilities, and Agriculture							

LEGEND:	
	Normally Acceptable: Specific land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise requirements.
	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Generally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	Land Use Discouraged: New construction or development should generally not be undertaken.

Table Source: Chart HS-1 of Fresno County 2000.

Fresno County Ordinance Code

Title 8, Health and Safety, Chapter 8.40, Noise Control, of the Fresno County Ordinance Code (Noise Ordinance) defines excessive noise levels, establishes acceptable noise level standards for various land uses and noise sources, and provides for enforcement actions

in the event that the standards are violated. For residential uses affected by non-transportation (i.e., stationary or operational) noise sources, Section 8.40.040 (Exterior Noise Standards) of the Noise Ordinance establishes performance standards as presented in Table 4.13-7, "Fresno County Noise Ordinance Standards."

In the event the measured ambient noise level exceeds the applicable noise level standard in any category shown in Table 4.13-7, the Noise Ordinance requires that the applicable standard be adjusted so as to equal the ambient noise level. Furthermore, if the noise source in question consists of simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises, the noise standards in Table 4.13-7 are reduced by 5 dB.

Table 4.13-7
Fresno County Noise Ordinance Standards

Duration of Hour Exceeded, Minutes	Statistical Descriptor	Noise Level Standard, dBA	
		Daytime[1]	*Nighttime*[2]
30	L50	50	45
15	L25	55	50
5	L8	60	55
1	L2	65	60
0	Lmax	70	65

Table Source: Title 8, Health and Safety, Chapter 8.40, Noise Control, of the Fresno County Ordinance Code (Noise Ordinance).
Table Notes:
1. Daytime is defined as 7 a.m. – 10 p.m.
2. Nighttime is defined as 10 p.m. – 7 a.m.

Zoning Ordinance of Fresno County—Land Use and Planning

The Zoning Ordinance of Fresno County—Land Use and Planning, last amended June 2018, has policies and ordinances related to noise and vibration. Specifically, Section 858, "Regulations for Surface Mining and Reclamation in All Districts," contains the following countywide development standards:

> ***Section 858—Regulations for Surface Mining and Reclamation in All Districts***
>
> **H. Mining and Reclamation Standards**
>
> The standards for surface mining operations and reclamation shall be as follows:
>
> 20. Good operating practices shall at all times be utilized to minimize noise, vibration, dust and unsightliness. In reviewing a proposal, the Planning Commission shall consider:
>
> a. The location of the processing plant.

b. The location where unused equipment will be stored.

c. Proposals for the removal of all structures, metallic equipment, debris, or objects upon conclusion of the extraction operations.

24. All surface mining operations and reclamation activities shall be conducted consistent with all policies of the Noise Element.

Surface mining operators are required to forward an annual surface mining report form to the DOC and to the County Department of Public Works and Development Services. After receipt of the operator's annual report form, the County is required to conduct an inspection of the surface mining operation within 12 months of the prior annual inspection. The purpose of the inspection is to verify compliance with the approved conditional use permit, approved mining and reclamation plan, approved financial assurances, and state regulations pertaining to mining. The County must submit the completed inspection report and a notice that the inspection has been completed to the DOC within 90 days after the completion of the inspection. The notice must provide:

- descriptions of aspects of the operation found not to be in compliance with SMARA and whether or not the issues were corrected before submission of the inspection report to the DOC;
- a statement describing the County's intended response to any aspects of the operations found not to be in compliance with SMARA and that were not corrected before the submission of the inspection report to the DOC; and
- a statement describing whether the operation has a reclamation plan, financial assurances, or interim management plan pending review before the County or financial assurances appeal pending before the State Mining and Geology Board.

4.13.3 Significance Criteria and Analysis Methodology

4.13.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant noise impact if it would result in:

a) generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
b) generation of excessive groundborne vibration or groundborne noise levels;
c) for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public

airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

The Rockfield Quarry is not located in the vicinity of a private airstrip, an airport land use plan, or within two miles of a public airport or public use airport. Therefore, this topic is not applicable and not be discussed further in this Draft EIR.

4.13.3.2 Significance Thresholds

The Appendix G significance criteria are qualitative criteria and do not quantitatively define a substantial noise increase or excessive vibration. The quantitative thresholds used in the analysis of potential noise and vibration impacts are described below.

Noise Significance Thresholds

The Federal Interagency Commission on Noise (FICON) developed a graduated scale for use in the assessment of project-related noise level increases, which are summarized in Table 4.3-8, "Significance of Changes in Cumulative Noise Exposure." The rationale for the graduated scale is that subject's reactions to increases in noise levels varied depending on the starting level of the noise. Specifically, with lower ambient noise environments, such as those below 60 dB L_{dn}, a larger increase in noise levels was required to achieve a negative reaction than was necessary in more elevated noise environments. In addition, according to the FICON study, if screening analysis shows that noise-sensitive areas would be at or above 65 dB L_{dn} and would have an increase of 1.5 dB or more, further analysis should be conducted.

Table 4.13-8
Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level (No Project), dB L_{dn}	Increase Required for Finding of Significance, dB
<60	+5 or more
60-65	+3 or more
>65	+1.5 or more

Table Source: FICON 1992.

Off-Site Traffic Noise Impact Thresholds

It is assumed that a project-related noise impact would occur if changes in noise levels due to project-related traffic on the local area roadways would result in one of the following conditions:

a) Increases in ambient noise levels exceeding the FICON thresholds identified in Table 4.3-8 at existing sensitive receptors.

   or

b) Traffic noise exposure exceeding the County's Normally Acceptable thresholds identified in Table 4.13-6 where ambient traffic noise conditions without the project would be below the Normally Acceptable thresholds.

On-Site Operations Noise Impact Thresholds

For noise generated by on-site equipment and processes occurring within either the Plant Site or Quarry Site, noise impacts are identified if the thresholds shown in Table 4.13-7 would be exceeded at sensitive receptor locations, after adjustment of those standards as appropriate to reflect ambient conditions.

Specific adjustments to the Table 4.13-7 standards for ambient conditions are made as follows:

- If the ambient exceeds the Table 4.13-7 standards, the ambient level becomes the standard pursuant to the Noise Ordinance requirements.
- If the ambient is 5 dB or less below the Table 4.13-7 standards, then the Table 4.13-7 standards are applicable without adjustment.
- If the ambient is more than 5 dB below the Table 4.13-7 standards, the standard becomes the ambient plus 5 dB.

Based on the adjustments above, the noise thresholds applicable to on-site project noise sources are summarized in Table 4.13-9, "Summary of Adjusted Noise Exposure Thresholds Applicable to On-Site Noise Sources," for the nearest representative sensitive receptors the vicinity of the Plant Site and Quarry Site.

Due to the nature of project-related noise sources, it is expected that the L50 standard will be the most restrictive. This is because the L50 standard is applicable to noise sources which are present in excess of 30 minutes out of an hour and the noise sources associated with aggregate excavation and processing frequently are present for the entire hour.

Table 4.13-9
Summary of Adjusted Noise Exposure Thresholds Applicable to On-Site Noise Sources

Receptor	Maximum Noise Level (Lmax, dBA)		Medium Noise Level (L50, dBA)	
	Daytime	*Nighttime*	*Daytime*	*Nighttime*
PLANT AREA				
P-1	70	67	50	45
P-2	64	61	49	43
P-3	73	70	58	52
P-4	64	61	45	42
P-5	64	62	47	46
QUARRY AREA				
Q-1	64	59	48	45
Q-2	64	59	48	45
Q-3	64	59	48	45
Q-4	64	59	48	45
Q-5	64	62	46	45
Q-6	70	65	51	48
Q-7	70	66	51	49
Q-8	70	67	53	51
Q-9	70	70	55	53
Q-10	70	66	53	47
Q-11	70	69	57	50
Q-12	72	71	58	52
Q-13	70	68	55	49
Q-14	67	65	50	47
Q-15	76	75	62	56

Table Source: Table 7 of Appendix H-1.
Table Notes: Noise exposure thresholds in Section 8.40.040 of the Noise Ordinance were adjusted based on the following:

- If the ambient exceeds the Table 4.13-7 standards, the ambient level becomes the standard pursuant to the Noise Ordinance requirements.
- If the ambient is 5 dB or less below the Table 4.13-7 standards, then the Table 4.13-7 standards are applicable without adjustment.
- If the ambient is more than 5 dB below the Table 4.13-7 standards, the standard becomes the ambient plus 5 dB.

Vibration Significance Thresholds

FTA significance thresholds were applied to this analysis. Table 4.13-10, "FTA Thresholds for Assessing Damage to Structures," presents the vibration levels at which damage to structures could occur. As shown in Table 4.13-10, a vibration level of 90 RMS VdB is the minimum at which the onset of damage to extremely susceptible buildings could occur. As a result, this level was considered to be a conservative benchmark against which project-generated vibration levels were evaluated in this analysis.

Table 4.13-10
FTA Thresholds for Assessing Damage to Structures

Building Category	Level RMS VdB[1]
I. Reinforced-concrete, steel or timber (no plaster)	102
II. Engineered concrete and masonry (no plaster)	98
III. Non-engineered timber and masonry buildings	94
IV. Buildings extremely susceptible to vibration damage	90

Table Source: Table 7-5 of FTA 2018.
Table Notes:
1. 1 RMS velocity in decibels (VdB) re 1 micro-inch per second.

Table 4.13-11, "FTA Thresholds for Assessing Groundborne Vibration Annoyance Potential," presents the vibration levels for assessing the potential of annoyance to occur at buildings with sensitive land uses, residences, and institutional land uses. According to Table 4.13-11, the general assessment impact level for frequent events applicable to residential uses is 72 RMS VdB. Where vibration levels exceed this threshold, a detailed vibration assessment is recommended. Because operations at both the Plant and Quarry Sites are essentially continuous, the FTA thresholds applicable to "Frequent Events" is applied to this analysis of potential annoyance resulting from project operations.

Table 4.13-11
FTA Thresholds for Assessing Groundborne Vibration Annoyance Potential

Land Use Category	Impact Levels RMS (VdB)		
	Frequent Event[1]	*Occasional Events[b]*	*Infrequent Events[c]*
Category 1: Buildings where vibration would interfere with interior ops.	65[d]	65[d]	65[d]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Table Source: Table 6-3 of FTA 2018.
Table Notes:
a. "Frequent Events" is defined as more than 70 vibration events of the same source per day.
b. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
c. "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.
d. This criterion limit is based on levels that are acceptable for most moderately-sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.

Blasting Significance Thresholds

Structural Damage Threshold

The U.S. Bureau of Mines has studied various aspects of ground vibration and airblast since 1930. In 1980, the culmination of over 50 years of research was compiled into Report of Investigations 8507 (U.S. Bureau of Mines 1980a). The study developed the structural damage threshold curve shown on Figure 4.13-5, "Blasting Structural Damage Threshold Curve." These thresholds are similar to the thresholds provided

in the *Blasting Guidance Manual* (OSMRE 1987). Threshold damage is defined by the U.S. Bureau of Mines as the loosening of paint, small plaster cracks at joints between construction elements, or the lengthening of old plaster cracks. Vibration would need to be considerably higher than the damage threshold shown on Figure 4.13-5 before damage to load-bearing or other structural portions of a house could occur. Based on Figure 4.13-5, the 0.75 in/sec PPV maximum ground vibration threshold to prevent damage to drywall were applied to the analysis of potential damage to structures.

Air Vibration Threshold

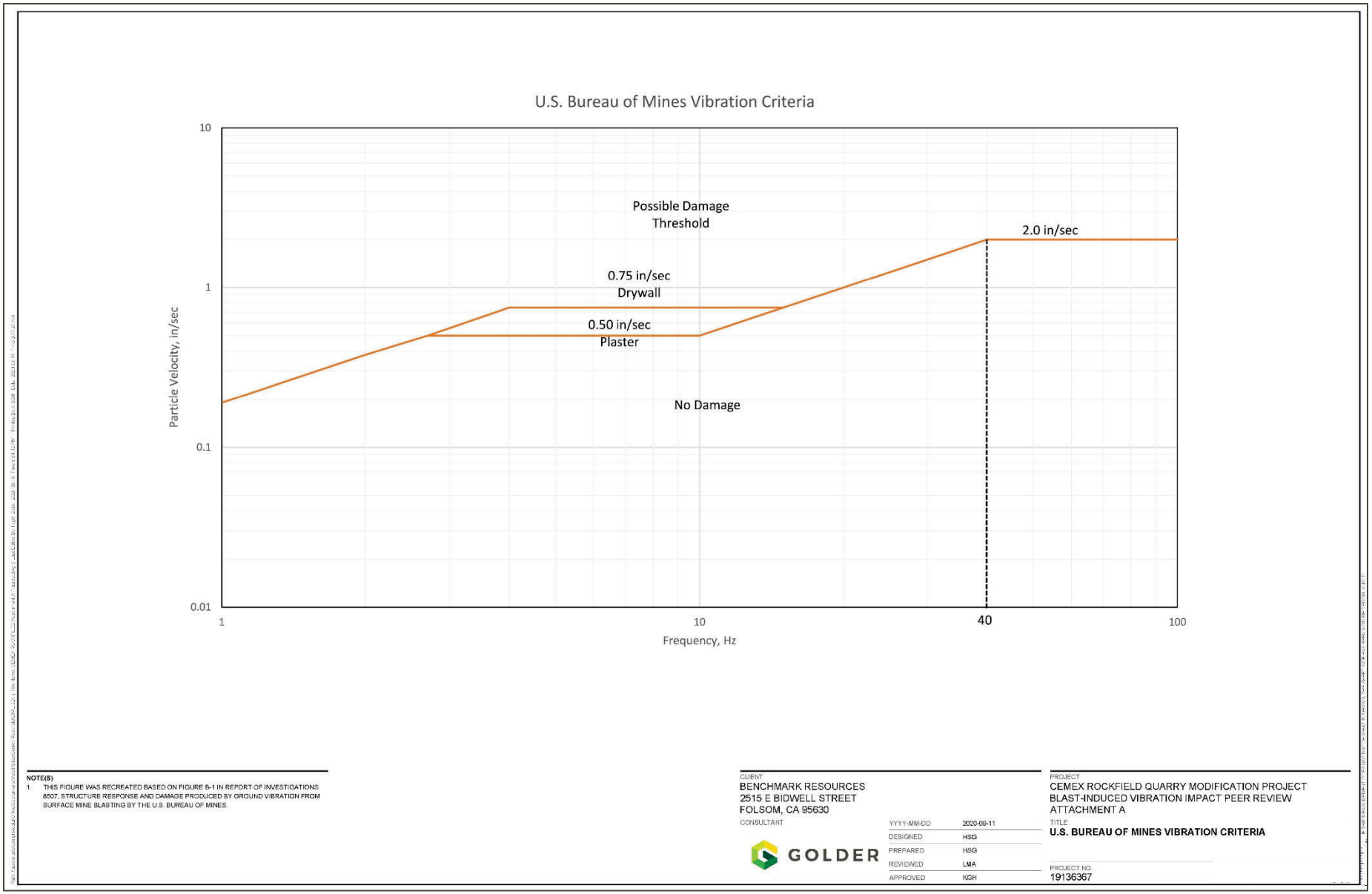
The U.S. Bureau of Mines (1980b) set forth airblast limits in its Report of Investigations 8485. These thresholds are the same as the thresholds provided in the *Blasting Guidance Manual* (OSMRE 1987). Although the air vibrations produced by production blasting are typically referred to as noise levels, the U.S. Bureau of Mines report recognizes that airblasts with frequencies below the threshold of human hearing (infrasonic) are capable of producing structural response. The most common example of infrasonic air vibrations that may produce structural response is wind rattling a window. Accordingly, the U.S. Bureau of Mines has recommended limits based upon the frequency range of the recording system. Table 4.13-12, "Airblast Damage Thresholds," presents the safe maximum airblast levels based on a minimal probability of the most superficial type of damage in residential-type structures.

Table 4.13-12
Airblast Damage Thresholds

Lower Frequency Limits of Measuring System	Maximum Level in dB
0.1 Hz high-pass system	134 dB
2 Hz high-pass system	133 dB
5 or 6 Hz high-pass system	129 dB
c- slow (events not exceeding 2 sec duration)	105 dB

Table Source: U.S. Bureau of Mines 1980b.

The U.S. Bureau of Mines concluded that the single best airblast descriptor is the 2 Hz high-pass system. Therefore, this analysis applied the 133 dB (0.01295 psi) threshold to prevent airblast damage to structure (Table 4.13-12). The U.S. Bureau of Mines also concluded that the airblast limits in Table 4.13-12 would provide annoyance acceptability of 95% of the population for 1 to 2 blast events per day.



SOURCE: Golder 2020; arranged by Benchmark Resources in 2022

Blasting Structural Damage Threshold Curve
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.13-5

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Groundwater Well Threshold

The fundamental factor in determining the safety of underground structures such as wells is whether there has been permanent deformation (cracking) of the rock at the well. As described in the "Blasting" subsection of Section 4.13.1.1, above, the cracking of the bedrock is generally limited to a cone-shaped volume in the immediate vicinity of the blasthole. A study by the U.S. Bureau of Mines (1980c) suggests that vibration of 2.0 in/sec PPV or less do not cause irreversible aquifer damage nor cause damage to any well components. Therefore, this analysis applied the 2.0 in/sec threshold to prevent damage to groundwater wells.

San Joaquin River Embankment Threshold

Vibra-Tech Engineers completed a study titled *Rock Blasting Induced Ground Vibration Effects of Structural Integrity of nearby San Joaquin River Embankments* that identified vibration thresholds for the San Joaquin River embankment (Appendix H-4). Vibra-Tech also completed a study titled *Geophysical Investigation (Seismic Refraction and MASW Surveys)* that consisted of an on-site geophysical investigation to determine the shear wave velocities of the river embankment (Appendix H-5).

Based on a factor of safety, the natural frequencies of the river embankments, the river cross section profile, existing available vibration thresholds, and Vibra-Tech Engineer's experience a velocity-frequency-based vibration criterion was developed and is displayed in Figure 4.13-6, "San Joaquin River Embankment Vibration Threshold Curve." At low frequencies (1-10 Hz) the vibration threshold is 0.50 in/sec, which is the most restrictive vibration amplitude shown in Figure 4.13-6. Therefore, the predicted vibration in this analysis is compared to the 0.50 in/sec low frequency limit.

4.13.3.3 Analysis Methodology

Plant Site Ambient Noise Measurements

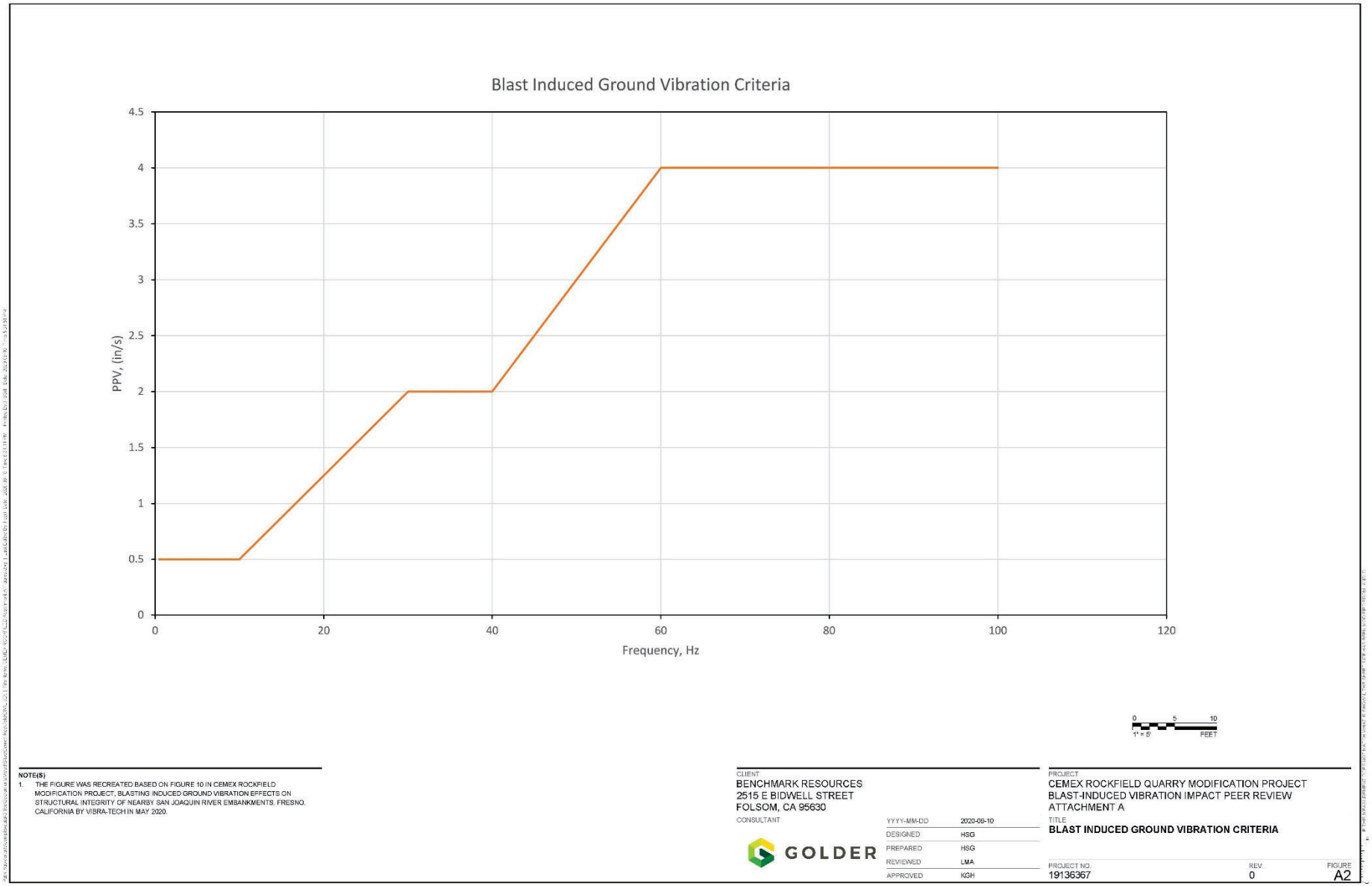
To quantify the existing ambient noise environment in the vicinity of the Plant Site, long-term noise level measurements were conducted by BAC at the four locations shown as P-A, P-B, P-C, and P-D on Figure 4.13-1 during the 5-day period spanning February 29 through March 4, 2019. Larson Davis Laboratories Model 820 precision integrating sound level meters were used to conduct the noise level surveys. The meters were calibrated before use with a Larson Davis Laboratories Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4). Photographs of the noise measurement sites and the results of the

continuous noise surveys at the Plant Site vicinity are provided numerically and graphically in the Noise Assessment (Appendix H-1).

As shown on Figure 4.13-1, in some cases the ambient noise measurement locations were in relatively close proximity to the nearest sensitive receptors to the Plant Site (P-1 through P-5) and in some cases the ambient noise measurement sites were located further away from those receptors. The ambient noise measurements were adjusted to estimate noise levels at the five nearest sensitive receptors The ambient noise measurements were adjusted as follows to estimate noise levels at the five nearest sensitive receptors:

- Ambient noise measurement Site P-A was located directly adjacent to Friant Road (80 feet from centerline) and was partially shielded from view of the roadway by a grade differential. Receptor P-1 is located approximately 350 feet from the centerline of Friant Road. As a result, the ambient noise measurement data collected at Site P-A was adjusted to account for the lack of topographic shielding and the differing distances to the roadway to arrive at ambient conditions for Receptor P-1.
- Ambient noise measurement Site P-B was located 200 feet from the Friant Road centerline. Receptor P-2 is located 1,700 feet from the centerline of Friant Road. As a result, the ambient data collected at Receptor P-2 was offset by -14 dB to arrive at ambient conditions at Receptor P-2.
- Ambient noise measurement Site P-B was located 200 feet from Friant Road, which is the same approximate distance as Receptor P-3 (winery). As a result, the ambient noise level data collected at Site P-B was used without offset to describe ambient conditions at Receptor P-3.
- Ambient noise measurement Sites P-C and P-D were approximately half as far from the main processing plant as receptors P-4 and P-5. As a result, plant area noise levels at Receptors P-4 and P-5 would be expected to be approximately 6 dB lower than plant noise levels measured at monitoring Sites P-C and P-D. However, ambient conditions at Receptors P-4 and P-5 are only partially defined by existing plant area noise sources. As a result, offsets of -3 dB were applied to ambient noise levels measured at Sites P-C and P-D to establish baseline ambient conditions at Receptors P-4 and P-5.

Table 4.13-3 shows the estimated ambient noise environment at each of the five sensitive receptor in the Plant Site vicinity following adjustments, as needed, to the ambient noise levels collected at the nearest representative measurement location.



SOURCE: Golder 2020; arranged by Benchmark Resources in 2022

San Joaquin River Embankment Vibration Threshold Curve
ROCKFIELD MODIFICATION PROJECT
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Figure 4.13-6

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Quarry Site Ambient Noise Measurements

To quantify the existing ambient noise environment in the vicinity of the Quarry Site, long-term noise level measurements were conducted by BAC at the five locations shown as Q-A, Q-B, Q-C, Q-D, and Q-E on Figure 4.13-2 during the 9-day period spanning January 24 through February 1, 2018. Larson Davis Laboratories Model 820 precision integrating sound level meters were used to conduct the noise level surveys. The meters were calibrated before use with a Larson Davis Laboratories Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Photographs of the noise measurement sites and the results of the continuous noise surveys at the Quarry Site vicinity are provided numerically and graphically in the Noise Assessment (Appendix H-1).

As indicated on Figure 4.13-2, in some cases the ambient noise measurement locations were in relatively close proximity to the nearest sensitive receptors to the Quarry Site (Q-1 through Q-15) and in some cases the ambient noise measurement sites were located further away from those receptors. The ambient noise measurements were adjusted to estimate noise levels at the five nearest sensitive receptors as follows:

- Ambient noise measurement Site Q-B was located directly adjacent to Receptor Q-14. As a result, the ambient noise measurement data collected at that location were used to directly assess ambient conditions at Receptor Q-14.
- Ambient noise measurement Site Q-C was not located at the same positions as Receptors Q-1 through Q-4. However, given the substantial distances from both the measurement Site Q-C and Receptors Q-1 through Q-4 from Friant Road, ambient conditions at measurement Site Q-3 are believed to be reasonably similar to ambient conditions at Receptors Q-1 through Q4. Further evidence to support this conclusion can be seen through inspection of Appendices C-19 through C-27 (Appendix H-1), which indicate that ambient noise measurement data collected at Site Q-C was not appreciably affected by existing excavation operations at the Quarry Site. Therefore, no offsets to the measured ambient conditions at Site Q-C were applied to establish baseline ambient conditions at Receptors Q-1 through Q-4.
- Due to the relatively close proximity of Measurement Site Q-D to Receptor Q-5, which represents the nearby park area to the north, ambient conditions are Site Q-D are considered to be representative of ambient conditions at the park site. Therefore, no offsets to the ambient noise measurement data collected at

measurement Site Q-D were applied to establish baseline ambient conditions at Receptor Q-5.

- Measurement Sites Q-A and Q-E were located in close proximity to Friant Road whereas Receptors Q-6 through Q-13 & Q-15 are located varying distances from Friant Road. As a result, the ambient data collected at measurement Sites Q-A & Q-D were adjusted to account for the different distances from Friant Road to the nearest receptors. Specifically, data collected at Sites Q-A & Q-D was projected to Receptors Q-6 – Q-13 & Q-15 using standard acoustical propagation algorithms for moving point sources.

Table 4.13-4 shows the estimated ambient noise environment at each of the 15 sensitive receptor in the Quarry Site vicinity following adjustments, as needed, to the ambient noise levels collected at the nearest representative measurement location.

Existing Traffic Noise Methodology

To describe existing noise levels due to traffic, the Federal Highway Administration Highway (FHWA) Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based on the Calveno reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the area. The model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. The day/night distribution of traffic is factored into the model calculations to assess noise exposure in terms of L_{dn}.

Traffic volumes for existing conditions were obtained from the Traffic Impact Study prepared by Peters Engineering for the proposed project (Appendix I-1). The percentages of truck usage on the area roadways were obtained from Caltrans truck counts and BAC observations and experience for similar roadways. Vehicle speeds were based on posted speed limits with adjustments for BAC field observations. The FHWA Traffic Noise Prediction Model input data for existing conditions is included in the Noise Assessment (Appendix H-1).

Operational Noise Analysis

The Noise Assessment (Appendix H-1) operational noise analysis analyzed the noise generation of three discrete components of the proposed project and compared the noise generation against the project significance thresholds. The three discrete components consist of:

- **Off-Site Traffic:** Changes in off-site traffic noise levels that would result from increased production and sales as aggregate production increases from the current

level of 1.4 million tons per year (MTY) to 2 MTY within approximately 5 years and ultimately 3 MTY within approximately 10 years.

- **Plant Site:** No appreciable change in on-site noise generation would initially occur at the Plant Site. However, as processing operations shift to the Quarry Site the noise generation of the Plant Site would decrease. Within approximately 30 years, all operations at the Plant Site would cease.
- **Quarry Site:** An increase in on-site noise generation at the Quarry Site would occur during Stage 1 operations due to the establishment of processing equipment at the Quarry Site. Existing excavation operations at the Quarry Site would continue, transitioning from surface mining to hard rock mining over time. Over time, noise levels at the Quarry Site would increase with the addition of blasting and the establishment of an aggregate processing plant, asphalt plant, ready-mix plant, and recycle plant at the Quarry Site.

Off-Site Traffic Noise Analysis

The off-site traffic analysis evaluated the no-project, project-only, and plus-project traffic noise levels during:

- Stage 1, Year 5 of the proposed project (2 MTY production levels at both Plant Site and Quarry Site),
- Stage 1, Year 15 of the proposed project (3 MTY production levels at both Plant Site and Quarry Site), and
- Stage 2, Year 40 of the proposed project (3 MTY production levels at the Quarry Site only)

To quantitatively assess traffic noise levels associated with the proposed project, the FHWA Traffic Noise Prediction Model (FHWA RD-77-108) was used. Traffic volumes for cumulative 5-year, 15-year, and 40-year conditions, both with and without the proposed project, were provided by Peters Engineering Group. That data is contained within the project Traffic Impact Study (Appendix I-1). BAC utilized that data with field observations and Caltrans truck classification count data to predict traffic noise level increases for the 5-year, 15-year, and 40-year conditions. The FHWA Traffic Noise Prediction Model input data for each of the project scenarios is provided in the Noise Assessment (Appendix H-1).

Plant Site Noise Analysis

To quantify the noise generation of the existing Plant Site operations, reference noise level data was collected by BAC at the existing Plant Site in June 2018. The asphalt plant is inactive at this location, so no measurements of asphalt plant noise were

warranted at the Plant Site. Because the recycle plant was not in operation during the noise survey period, noise level data collected at the CEMEX Elliot Plant Site in Pleasanton on January 25, 2018, and BAC file data for similar equipment were utilized to quantify the existing recycle plant noise emissions. Backup warning devices were used on all mobile equipment operating during the reference noise surveys. As a result, noise generated by backup warning devices was included in the reference noise surveys.

The reference levels were projected to the nearest receptors in the Plant Site vicinity using standard algorithms for spherical spreading of sound radiating away from a point source (i.e. 6 dB decrease per doubling of distance from the source). In addition, a -1.5 dB per thousand feet offset was applied to account for the atmospheric absorption of sound in air. Finally, offsets were applied to account for shielding of existing receptors by intervening topography. BAC utilized industry standard noise barrier analysis algorithms to predict the noise attenuation provided by intervening shielding. That shielding is predicted to range from 5-8 dB at the shielded receptors. The Noise Assessment (Appendix H-1) provides the methodology used to compute distances, reference source noise levels, estimated shielding offsets, and predicted noise levels for each source at each receptor for the Plant Site impact evaluation.

It should be noted that, while ready-mix plant operations occasionally occur during nighttime periods, operation of the aggregate processing plant and recycle plant equipment typically do not occur at this location during nighttime hours. In addition, the existing asphalt plant at the current Plant Site would be replaced with a more modern plant at the same location, and future nighttime asphalt plant operations would periodically occur at the Plant Site following that equipment replacement. As a result, the estimate noise levels reflect operation of the aggregate processing plant, asphalt plant, ready-mix plant, and recycle plants during daytime hours. However, only operation of the ready-mix and asphalt plants is included in the nighttime calculations.

Quarry Site Noise Analysis

To quantify the noise generation of the existing Quarry Site operations, the reference noise levels collected at the Quarry Site were projected to the nearest receptors in the Quarry Site vicinity using standard algorithms for spherical spreading of sound radiating away from a point source (i.e. 6 dB decrease per doubling of distance from the source). In addition, a -1.5 dB per thousand feet offset was applied to account for the atmospheric absorption of sound in air. Finally, offsets were applied to account for shielding of existing receptors by intervening topography. BAC utilized industry standard noise barrier analysis algorithms to predict the noise attenuation provided

by intervening shielding. That shielding is predicted to range from 5-10 dB at the shielded receptors. The Noise Assessment (Appendix H-1) provides the methodology used to compute distances, reference source noise levels, estimated shielding offsets, and predicted noise levels for each source at each receptor for the Quarry Site impact evaluation.

For a conservative assessment of potential noise impacts related to Quarry Site operations, it was assumed that all sources except recycle plant operations could be in operation during nighttime hours (as indicated in Table 2-5, "Proposed Typical Hours and Days of Operation," in Chapter 2, "Project Description," of this Draft EIR, recycle operations would be limited to daytime hours). Furthermore, it was assumed that initial excavation activities would not be shielded from the elevated residences to the west (receptors Q-1 through Q-4 on Figure 4.13-2). However, as excavation activities progress deeper into the mining pit, shielding by intervening topography (the pit edge) would reduce excavation-related noise at those receptors.

Blasting would occur once to twice a week between the hours of 10 a.m. and 2 p.m. Hard-rock drilling would be required prior to blasting. Each blast would require an average of 25 drill holes, each approximately 50 feet deep. The time required to conduct the drilling would be approximately 2 days per blast. According to the Federal Highway Administration Roadway Construction Noise Model (RCNM), rock drills generate maximum noise levels of approximately 75 dBA at 100 feet, with average levels of approximately 69 dBA at that same distance. For the Noise Assessment (Appendix H-1), rock drilling operations were included under the "Excavation" category, separately from the methodology of the *Blast Impact Analysis* described below.

Blast Impact Analysis

The previous sections have presented research on vibration levels for the protection of structures around the perimeter of the site. Since blasting is not yet taking place at the quarry, it is necessary to predict the level of blast-induced ground and air vibration levels from the blasting operations for comparison to this research. The Noise Assessment used Equation 1 to calculate vibration intensity levels at particular locations based upon attenuation factors, charge weight, and distance from the blast to the location of concern (International Society of Explosives Engineers 1998, cited in Appendix H-3).

$$PPV = 242\left(\frac{D}{\sqrt{W}}\right)^{-1.6} \qquad \textbf{Equation 1}$$

PPV= Peak particle velocity (in/sec)

D = Distance from blast to structure (feet)

W = Maximum lbs. of explosives/delay

In addition to vibration energy that travels through the ground, blasting also causes vibrations in air that will leave the blast site area. Similar to ground vibration energy, air vibrations also decay with distance, however they do not do so as rapidly. Air vibrations from most types of blasting decay at a rate of 6.6 dB per doubling of distance. The Noise Assessment used Equation 2 to predict air overpressures from blasting:

$$PPV = 1.0\left(\frac{D}{\sqrt[3]{W}}\right)^{-1.1}$$ **Equation 2**

P= Peak air overpressure (psi)

D = Distance from blast to structure (feet)

W = Maximum lbs. of explosives/delay

As described in Chapter 2, of this Draft EIR, the blast designs at the Quarry Site would change based on the distance between the planned blasting location and the nearest sensitive receptors. As part of the *Blast Impact Analysis* (Appendix H-3) Vibra-Tech analyzed blast designs utilizing the following parameters for both an emulsion product with a density of 1.28 g/cc and an ANFO product with a density of 0.87 g/cc. Borehole diameters that were evaluated are 3.5-inch, 4-inch, 4.5-inch, 5-inch, 5.5-inch, 6-inch, and 6.75-inch. Borehole loads utilizing a solid column, 2 explosive decks, and 3 explosive decks were also evaluated. Vibra-Tech then determined the max pounds per delay interval for each design assuming one hole detonating per delay interval using Equation 3.

$$W = \left(\frac{D}{SD}\right)^2$$ **Equation 3**

W= Maximum lbs. of explosives/delay

D = Distance from blast to receptor (feet)

SD = Scaled distance

4.13.4 Project Impacts and Mitigation Measures

Impact 4.13-1: Generate a Substantial Temporary or Permanent Increase in Ambient Noise Levels From Project-Generated Traffic in Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies

The increased production and sales that would occur as a result of the proposed project would generate increased off-site truck traffic that would potentially increase noise levels along the roadways that would be utilized by project-generated traffic (i.e., Friant Road, Willow Avenue, Road 145, Highway 41, North Fork Road/Road 206). The estimated no-project, project-only, and plus-project traffic noise levels for the 5-year, 15-year, and 40-year conditions are shown in Table 4.13-13, "Traffic Noise Levels During Stage 1, Year 5 (2 Million Tons Per Year Production Levels at Plant Site and Quarry Site)," Table 4.13-14, "Traffic Noise Levels During Stage 1, Year 15 (3 Million Tons Per Year Production Levels at Plant Site and Quarry Site)," and Table 4.13-15, "Traffic Noise Levels During Stage 2, Year 40 (3 Million Tons Per Year Production Levels at Quarry Site Only)," respectively.

Table 4.13-13
Traffic Noise Levels During Stage 1, Year 5
(2 million Tons Per Year Production Levels at Plant Site and Quarry Site)

Int. #[a]	Description	Direction[b]	Estimated Noise Levels (dBA L_{dn})[c]			Change in Noise Levels[d] (dBA)		Substantial Increase?	Impact?
			No Project	*Project Only*	*With Project*	*Increase*	*Threshold*		
1	SR 41 / Road 145	**North**	67.9	50.1	68.0	0.1	1.5	No	No
1	SR 41 / Road 145	**East**	62.2	58.7	63.8	1.6	3.0	No	No
1	SR 41 / Road 145	**West**	65.5	58.0	66.2	0.7	1.5	No	No
2	Road 206 / Road 145	**South**	61.9	58.3	63.5	1.6	3.0	No	No
2	Road 206 / Road 145	**West**	62.5	58.7	64.0	1.5	3.0	No	No
3	Friant Rd / North Fork Rd	**North**	61.2	42.9	61.2	0.0	3.0	No	No
3	Friant Rd / North Fork Rd	**South**	66.3[e]	61.0[e]	67.4[e]	1.1	1.5	No	No
3	Friant Rd / North Fork Rd	**West**	61.6	58.3	63.2	1.6	3.0	No	No
4	Friant Rd / Quarry Entrance	**North**	67.5	59.2	68.1	0.6	1.5	No	No

Int. #[a]	Description	Direction[b]	Estimated Noise Levels (dBA L_{dn})[c]			Change in Noise Levels[d] (dBA)		Substantial Increase?	Impact?
			No Project	*Project Only*	*With Project*	*Increase*	*Threshold*		
4	Friant Rd / Quarry Entrance	**South**	68.0	63.1	69.3	1.3	1.5	No	No
5	Friant Road / Plant Entrance	**North**	67.8	63.1	69.1	1.3	1.5	No	No
5	Friant Road / Plant Entrance	**South**	67.6	62.8	68.9	1.3	1.5	No	No
6	Friant Road / Willow Ave	**North**	67.6	62.8	68.9	1.3	1.5	No	No
6	Friant Road / Willow Ave	**South**	66.2	61.8	67.5	1.3	1.5	No	No
6	Friant Road / Willow Ave	**East**	62.5	55.5	63.3	0.8	3.0	No	No
7	Friant Rd / Copper River Dr	**North**	65.3	61.5	66.7	1.4	1.5	No	No
7	Friant Rd / Copper River Dr	**South**	67.4	61.5	68.4	1.0	1.5	No	No
8	Friant Rd / Copper Ave	**North**	67.4	61.5	68.4	1.0	1.5	No	No
8	Friant Rd / Copper Ave	**South**	68.6	61.1	69.3	0.7	1.5	No	No
9	Willow Ave / Copper Ave	**North**	62.4	55.1	63.2	0.8	3.0	No	No
9	Willow Ave / Copper Ave	**South**	63.6	55.1	64.2	0.6	3.0	No	No
10	Friant Rd / Lakeview Dr	**North**	68.4	61.1	69.1	0.7	1.5	No	No
10	Friant Rd / Lakeview Dr	**South**	68.9	61.1	69.6	0.7	1.5	No	No
11	Friant Rd / Champlain Dr	**North**	68.9	61.1	69.6	0.7	1.5	No	No
11	Friant Rd / Champlain Dr	**South**	69.2	61.1	69.8	0.6	1.5	No	No
12	Friant Rd / Ft. Washington Rd	**North**	69.1	61.1	69.8	0.7	1.5	No	No
12	Friant Rd / Ft. Washington Rd	**South**	71.0	61.1	71.4	0.4	1.5	No	No
13	Friant Rd / Shepherd Ave	**North**	71.0	61.1	71.4	0.4	1.5	No	No

Int. #[a]	Description	Direction[b]	Estimated Noise Levels (dBA L_{dn})[c]			Change in Noise Levels[d] (dBA)		Substantial Increase?	Impact?
			No Project	*Project Only*	*With Project*	*Increase*	*Threshold*		
13	Friant Rd / Shepherd Ave	**South**	73.1	60.8	73.3	0.2	1.5	No	No
13	Friant Rd / Shepherd Ave	**East**	65.8	48.5	65.9	0.1	1.5	No	No
14	Friant Rd / Audubon Dr	**North**	72.9	60.8	73.2	0.3	1.5	No	No
14	Friant Rd / Audubon Dr	**South**	71.0	60.4	71.3	0.3	1.5	No	No
15	Friant Rd / Fresno St	**North**	71.1	60.4	71.5	0.4	1.5	No	No
15	Friant Rd / Fresno St	**South**	71.4	59.6	71.7	0.3	1.5	No	No
15	Friant Rd / Fresno St	**East**	63.8	52.5	64.1	0.3	3.0	No	No

Table Source: Table 10 of Appendix H-1
Table Notes: Int. # = Intersection number.
a. The intersections are those identified in the Traffic Impact Study (Appendix I-1) and are shown on Figure 4.17-1.
b. The direction indicates whether the roadway segment is located north, south, east, or west of the study intersection.
c. All roadway segments except Intersection 3 South were modelled at 100 feet from the roadway centerline.
d. Change in noise levels is the difference between "With Project" and "No Project" noise levels.
e. Intersection 3 South noise levels were modelled at a distance of 60 feet from the roadway centerline due to the presence of existing residences at that distance.

As indicated in Table 4.13-13, during year 5 (Stage 1) of the proposed project, the project-generated increase in noise levels along each roadway segment would be below the applicable significance threshold summarized in Table 4.13-9. The maximum increase that would occur as a result of the proposed project is 1.6 dBA at Intersections 1, 2, and 3 (intersection locations are shown on Figure 4.17-1). In addition, noise levels without the proposed project would all exceed 60 dBA L_{dn} at 100 feet from the centerline of the roadway. Therefore, the project-generated noise increase would not have the potential to cause noise levels at residential locations to exceed the 60 dBA L_{dn} "Normally Acceptable" community noise exposure level established in the *Fresno County General Plan* (Fresno County 2024) (Table 4.13-6). As a result, traffic noise increases during year 5 (Stage 1) of the proposed project would be less than significant.

Table 4.13-14
Traffic Noise Levels During Stage 1, Year 15
(3 million Tons Per Year Production Levels at Plant Site and Quarry Site)

Int.#[a]	Description	Direction[b]	Estimated Noise Levels (dBA L_{dn})[c]			Change in Noise Levels[d] (dBA)		Substantial Increase?	Impact?
			No Project	*Project Only*	*With Project*	*Increase*	*Threshold*		
1	SR 41 / Road 145	**North**	70.2	52.0	70.3	0.1	1.5	No	No
1	SR 41 / Road 145	**East**	69.4	60.6	69.9	0.5	1.5	No	No
1	SR 41 / Road 145	**West**	67.6	59.9	68.3	0.7	1.5	No	No
2	Road 206 / Road 145	**South**	67.2	60.2	68.0	0.8	1.5	No	No
2	Road 206 / Road 145	**West**	68.4	60.6	69.0	0.6	1.5	No	No
3	Friant Rd / North Fork Rd	**North**	64.2	44.8	64.2	0.0	3.0	No	No
3	Friant Rd / North Fork Rd	**South**	69.8[e]	62.9[e]	70.6[e]	0.8	1.5	No	No
3	Friant Rd / North Fork Rd	**West**	68.0	60.2	68.7	0.7	1.5	No	No
4	Friant Rd / Quarry Entrance	**North**	70.9	61.0	71.3	0.4	1.5	No	No
4	Friant Rd / Quarry Entrance	**South**	71.2	65.1	72.2	1.0	1.5	No	No
5	Friant Road / Plant Entrance	**North**	71.1	65.1	72.1	1.0	1.5	No	No
5	Friant Road / Plant Entrance	**South**	71.0	64.7	71.9	0.9	1.5	No	No
6	Friant Road / Willow Ave	**North**	71.0	64.7	71.9	0.9	1.5	No	No
6	Friant Road / Willow Ave	**South**	69.5	63.7	70.5	1.0	1.5	No	No
6	Friant Road / Willow Ave	**East**	65.2	57.4	65.9	0.7	1.5	No	No
7	Friant Rd / Copper River Dr	**North**	69.0	63.3	70.0	1.0	1.5	No	No
7	Friant Rd / Copper River Dr	**South**	69.6	63.3	70.5	0.9	1.5	No	No
8	Friant Rd / Copper Ave	**North**	69.6	63.3	70.5	0.9	1.5	No	No
8	Friant Rd / Copper Ave	**South**	69.8	63.0	70.6	0.8	1.5	No	No
9	Willow Ave / Copper Ave	**North**	66.3	57.0	66.8	0.5	1.5	No	No

Int.#[a]	Description	Direction[b]	Estimated Noise Levels (dBA L_{dn})[c]			Change in Noise Levels[d] (dBA)		Substantial Increase?	Impact?
			No Project	*Project Only*	*With Project*	*Increase*	*Threshold*		
9	Willow Ave / Copper Ave	**South**	66.1	57.0	66.6	0.5	1.5	No	No
10	Friant Rd / Lakeview Dr	**North**	69.1	63.0	70.1	1.0	1.5	No	No
10	Friant Rd / Lakeview Dr	**South**	69.7	63.0	70.5	0.8	1.5	No	No
11	Friant Rd / Champlain Dr	**North**	70.0	63.0	70.8	0.8	1.5	No	No
11	Friant Rd / Champlain Dr	**South**	70.3	63.0	71.0	0.7	1.5	No	No
12	Friant Rd / Ft. Washington Rd	**North**	70.3	63.0	71.1	0.8	1.5	No	No
12	Friant Rd / Ft. Washington Rd	**South**	71.7	63.0	72.3	0.6	1.5	No	No
13	Friant Rd / Shepherd Ave	**North**	71.8	63.0	72.3	0.5	1.5	No	No
13	Friant Rd / Shepherd Ave	**South**	73.9	62.7	74.2	0.3	1.5	No	No
13	Friant Rd / Shepherd Ave	**East**	66.7	50.3	66.8	0.1	1.5	No	No
14	Friant Rd / Audubon Dr	**North**	73.8	62.7	74.1	0.3	1.5	No	No
14	Friant Rd / Audubon Dr	**South**	72.0	62.3	72.4	0.4	1.5	No	No
15	Friant Rd / Fresno St	**North**	72.2	62.3	72.7	0.5	1.5	No	No
15	Friant Rd / Fresno St	**South**	72.7	61.4	73.0	0.3	1.5	No	No
15	Friant Rd / Fresno St	**East**	65.1	54.3	65.5	0.4	1.5	No	No

Table Source: Table 11 of Appendix H-1.
Table Notes: Int. # = Intersection number.

a. The intersections are those identified in the Traffic Impact Study (Appendix I-1) and are shown on Figure 4.17-1.
b. The direction indicates whether the roadway segment is located north, south, east, or west of the study intersection.
c. All roadway segments except Intersection 3 South were modelled at 100 feet from the roadway centerline.
d. Change in noise levels is the difference between "With Project" and "No Project" noise levels.
e. Intersection 3 South noise levels were modelled at a distance of 60 feet from the roadway centerline due to the presence of existing residences at that distance.

As indicated in Table 4.13-14, during year 15 (Stage 1) of the proposed project, the project-generated increase in noise levels along each roadway segment would be below the applicable significance threshold summarized in Table 4.13-9. The maximum increase

that would occur as a result of the proposed project is 1.0 dBA at Intersections 4, 5, 6, 7, and 10 (intersection locations are shown on Figure 4.17-1). In addition, noise levels without the proposed project would all exceed 60 dBA L_{dn} at 100 feet from the centerline of the roadway. Therefore, the project-generated noise increase would not have the potential to cause noise levels at residential locations to exceed the 60 dBA L_{dn} "Normally Acceptable" community noise exposure level established in the *Fresno County General Plan* (Fresno County 2000) (Table 4.13-6). As a result, traffic noise increases during year 15 (Stage 1) of the proposed project would be less than significant.

Table 4.13-15
Traffic Noise Levels During Stage 2, Year 40
(3 million Tons Per Year Production Levels at Quarry Site Only)

Int.#[a]	Description	Direction[b]	Estimated Noise Levels (dBA L_{dn})[c]			Change in Noise Levels[d] (dBA)		Substantial Increase?	Impact?
			No Project	*Project Only*	*With Project*	*Increase*	*Threshold*		
1	SR 41 / Road 145	**North**	71.2	52.0	71.3	0.1	1.5	No	No
1	SR 41 / Road 145	**East**	72.9	60.6	73.1	0.2	1.5	No	No
1	SR 41 / Road 145	**West**	69.4	60.0	69.9	0.5	1.5	No	No
2	Road 206 / Road 145	**South**	69.3	60.3	69.8	0.5	1.5	No	No
2	Road 206 / Road 145	**West**	71.0	60.6	71.4	0.4	1.5	No	No
3	Friant Rd / North Fork Rd	**North**	66.0	44.9	66.0	0.0	1.5	No	No
3	Friant Rd / North Fork Rd	**South**	71.7[e]	63.0[e]	72.2[e]	0.5	1.5	No	No
3	Friant Rd / North Fork Rd	**West**	70.6	60.3	71.0	0.4	1.5	No	No
4	Friant Rd / Quarry Entrance	**North**	72.3	61.1	72.6	0.3	1.5	No	No
4	Friant Rd / Quarry Entrance	**South**	72.5	64.8	73.2	0.7	1.5	No	No
5	Friant Road / Plant Entrance	**North**	72.5	64.8	73.2	0.7	1.5	No	No

Int.#[a]	Description	Direction[b]	Estimated Noise Levels (dBA L_{dn})[c]			Change in Noise Levels[d] (dBA)		Substantial Increase?	Impact?
			No Project	*Project Only*	*With Project*	*Increase*	*Threshold*		
5	Friant Road / Plant Entrance	**South**	72.5	64.8	73.2	0.7	1.5	No	No
6	Friant Road / Willow Ave	**North**	72.5	64.8	73.2	0.7	1.5	No	No
6	Friant Road / Willow Ave	**South**	71.0	63.7	71.7	0.7	1.5	No	No
6	Friant Road / Willow Ave	**East**	66.4	57.4	67.0	0.6	1.5	No	No
7	Friant Rd / Copper River Dr	**North**	70.5	63.4	71.3	0.8	1.5	No	No
7	Friant Rd / Copper River Dr	**South**	70.8	63.4	71.5	0.7	1.5	No	No
8	Friant Rd / Copper Ave	**North**	70.7	63.4	71.5	0.8	1.5	No	No
8	Friant Rd / Copper Ave	**South**	70.6	63.1	71.3	0.7	1.5	No	No
9	Willow Ave / Copper Ave	**North**	68.0	57.1	68.3	0.3	1.5	No	No
9	Willow Ave / Copper Ave	**South**	67.4	57.1	67.7	0.3	1.5	No	No
10	Friant Rd / Lakeview Dr	**North**	69.7	63.1	70.5	0.8	1.5	No	No
10	Friant Rd / Lakeview Dr	**South**	70.2	63.1	71.0	0.8	1.5	No	No
11	Friant Rd / Champlain Dr	**North**	70.7	63.1	71.4	0.7	1.5	No	No
11	Friant Rd / Champlain Dr	**South**	70.9	63.1	71.6	0.7	1.5	No	No

Int.#[a]	Description	Direction[b]	Estimated Noise Levels (dBA L_{dn})[c]			Change in Noise Levels[d] (dBA)		Substantial Increase?	Impact?
			No Project	*Project Only*	*With Project*	*Increase*	*Threshold*		
12	Friant Rd / Ft. Washington Rd	**North**	71.0	63.1	71.7	0.7	1.5	No	No
12	Friant Rd / Ft. Washington Rd	**South**	72.2	63.1	72.7	0.5	1.5	No	No
13	Friant Rd / Shepherd Ave	**North**	72.2	63.1	72.7	0.5	1.5	No	No
13	Friant Rd / Shepherd Ave	**South**	74.2	62.7	74.5	0.3	1.5	No	No
13	Friant Rd / Shepherd Ave	**East**	67.1	50.4	67.2	0.1	1.5	No	No
14	Friant Rd / Audubon Dr	**North**	74.2	62.7	74.5	0.3	1.5	No	No
14	Friant Rd / Audubon Dr	**South**	72.5	62.4	72.9	0.4	1.5	No	No
15	Friant Rd / Fresno St	**North**	72.7	62.4	73.1	0.4	1.5	No	No
15	Friant Rd / Fresno St	**South**	73.3	61.5	73.6	0.3	1.5	No	No
15	Friant Rd / Fresno St	**East**	65.7	54.4	66.0	0.3	1.5	No	No

Table Source: Table 12 of Appendix H-1.
Table Notes: Int. # = Intersection number.
a. The intersections are those identified in the Traffic Impact Study (Appendix I-1) and are shown on Figure 4.17-1.
b. The direction indicates whether the roadway segment is located north, south, east, or west of the study intersection.
c. All roadway segments except Intersection 3 South were modelled at 100 feet from the roadway centerline.
d. Change in noise levels is the difference between "With Project" and "No Project" noise levels.
e. Intersection 3 South noise levels were modelled at a distance of 60 feet from the roadway centerline due to the presence of existing residences at that distance.

As indicated in Table 4.13-15, during year 40 (Stage 2) of the proposed project, the project-generated increase in noise levels along each roadway segment would be below the applicable significance threshold summarized in Table 4.13-9. The maximum increase that would occur as a result of the proposed project is 0.8 dBA at

Intersections 2, 3, 14, and 15 (intersection locations are shown on Figure 4.17-1). In addition, noise levels without the proposed project would all exceed 60 dBA L_{dn} at 100 feet from the centerline of the roadway. Therefore, the project-generated noise increase would not have the potential to cause noise levels at residential locations to exceed the 60 dBA L_{dn} "Normally Acceptable" community noise exposure level established in the *Fresno County General Plan* (Fresno County 2024) (Table 4.13-6). As a result, traffic noise increases during year 40 (Stage 2) of the proposed project would be less than significant.

Upon completion of mining, the Plant Site and Quarry Site would be converted to open space land use that would not generate long-term vehicular traffic. Therefore, the reclamation phase of the proposed project would have no impact on traffic noise levels.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.13-2: Generate a Substantial Temporary or Permanent Increase in Ambient Noise Levels From Plant Site Stage 1 Operations In Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies

The locations of the processing and production equipment on the Plant Site during Stage 1 operations are shown on Figure 2-7, "Proposed Plant Site Mining Plan," in Chapter 2, of this Draft EIR, and the locations of the nearest sensitive receptors to the Plant Site are shown on Figure 4.13-1. The nearest receptors are located between approximately 1,900 feet to over 6,000 feet from the Plant Site. Intervening topography and aggregate stockpiles providing partial to extensive shielding of existing Plant Site noise generation at the nearest sensitive receptors. Table 4.13-16, "Estimated Plant Site Noise Levels (dBA) at Nearest Receptors," presents the estimated noise levels from proposed Plant Site operations generated at the nearest sensitive receptors.

Table 4.13-16
Estimated Plant Site Noise Levels (dBA) at Nearest Receptors

Receptor[1]	Plant Area Noise Emissions				Noise Impact Thresholds[4]				Impact Thresholds Exceeded?			
	Daytime[2]		*Nighttime*[3]		*Daytime*[2]		*Nighttime*[3]		*Daytime*[2]		*Nighttime*[3]	
	L_{max}	L50	L_{max}	L50	L_{max}	L50	L_{max}	L50	L_{max}	L50	L_{max}	L50
P-1	50	47	40	44	70	50	67	45	No	No	No	No
P-2	35	39	27	37	64	49	61	43	No	No	No	No

Receptor[1]	Plant Area Noise Emissions				Noise Impact Thresholds[4]				Impact Thresholds Exceeded?			
	Daytime[2]		*Nighttime*[3]		*Daytime*[2]		*Nighttime*[3]		*Daytime*[2]		*Nighttime*[3]	
	L_{max}	L50	L_{max}	L50	L_{max}	L50	L_{max}	L50	L_{max}	L50	L_{max}	L50
P-3	35	36	28	33	73	58	70	52	No	No	No	No
P-4	46	**47**	36	42	64	45	61	42	No	**Yes**	No	No
P-5	49	**49**	37	44	64	47	62	46	No	**Yes**	No	No

Table Source: Table 13 of Appendix H-1.
Table Notes: Noise levels that exceed impact thresholds are **bold**.
1. The nearest representative receptors to the Plant Site are shown on Figure 4.13-1.
2. Daytime hours are 7 a.m. to 10 p.m. This data represent the average daytime noise levels in each category for the 5 day ambient noise monitoring period at the Plant Site locations.
3. Nighttime hours are 10 p.m. to 7 a.m. This data represent the average nighttime noise levels in each category for the 5-day ambient noise monitoring period at the Plant Site locations.
4. Noise Impact Thresholds are described in Table 4.13-9.

As shown in Table 4.13-16, the predicted daytime and nighttime noise levels at the Plant Site would be in compliance with the significance thresholds at Receptors P-1 through P-3. However, daytime noise levels at Receptors P-4 and P-5 could exceed the significance thresholds by about 2 dB. This is a potentially significant impact. The implementation of Mitigation Measure 4.13-1 would require the implementation of noise reduction measures at the Plant Site. Because the identified exceedance of the significance criteria would be relatively small in magnitude (2 dB), it is anticipated that, with the implementation of one or more of the noise reduction measures, it would be feasible to reduce operational noise from the Plant Site to below the significance thresholds. Therefore, this impact would be less than significant with mitigation.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.13-2: *Plant Site Noise Reduction*

The operator of the Rockfield Quarry (Operator) shall implement one or more of the following measures to reduce noise from Plant Site operations:

1) *Line aggregate hopper drop-points with heavy urethane sheets.*
2) *Ensure that all processing area conveyors are properly lubricated at all times.*
3) *Equip all mobile plant area equipment with acoustic growler-type backup warning systems, rather than conventional beepers.*
4) *Suspend acoustic curtains around the aggregate processing plant crushers and screen decks (i.e. the loudest components of the processing plant).*
5) *Install acoustic silencers on the asphalt plant bag house exhaust fan.*
6) *Suspend acoustic curtains around the asphalt plant burner.*
7) *Following implementation of the appropriate noise control measures identified above, noise monitoring shall be conducted to confirm the effectiveness of noise*

control measures and compliance with the applicable noise standards. Noise monitoring shall be conducted by a qualified noise specialist within 1 month of the initiation of excavation and operation of the hot-mix asphalt plant on the Plant Site. Monitoring locations and estimated noise levels at the nearest sensitive receptors to the Plant Site shall be consistent with the noise-monitoring locations and methodology included in the "Environmental Noise and Vibration Assessment, July 26, 2021." Changes from the locations and methodology that are determined to be necessary by the qualified noise specialist shall be documented. If noise levels are found to exceed the thresholds, additional noise reduction measures shall be implemented, and monitoring conducted until the thresholds achieve acceptable levels. Quarterly reports of noise monitoring and reduction efforts shall be developed and submitted to the County until noise monitoring shows that Plant Site noise levels have been reduced to below the applicable thresholds. If complaints regarding noise generated by Plant Site operations are received by the County, additional noise monitoring shall be conducted in accordance with the procedures described above.

Level of Significance After Mitigation: Less than significant.

Impact 4.13-3: Generate a Substantial Temporary or Permanent Increase in Ambient Noise Levels From Quarry Site Stage 1 and 2 Operations and Final Reclamation In Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies

Aggregate mining is ongoing at the Quarry Site; however, the site currently does not contain any processing or production facilities. Under the proposed project, an aggregate processing plant and a portable aggregate plant would be operated on the Quarry Site during Stage 1. At the beginning of Stage 2 operations, the concrete plant, asphalt plant, and portable recycle plant from the Plant Site would be brought to the Quarry Site. Figure 2-8, "Proposed Quarry Site Mining Plan," of Chapter 2, of this Draft EIR, shows the proposed location of these facilities within the Quarry Site.

Figure 4.13-2 shows the locations of the nearest sensitive receptors to the Quarry Site, which are located between approximately 250 feet to over 6,000 feet from the Quarry Site. Intervening topography and aggregate stockpiles providing partial to extensive shielding of existing Quarry Site noise generation at many of the sensitive receptors. Table 4.13-17, "Estimated Quarry Site Noise Levels (dBA) at Nearest Receptors," presents the estimated noise levels from proposed Quarry Site operations generated at the nearest sensitive receptors.

Table 4.13-17
Estimated Quarry Site Noise Levels (dBA) at Nearest Receptors

Receptor[1]	Plant Area Noise Emissions				Noise Impact Thresholds[4]				Impact Thresholds Exceeded?			
	Daytime[2]		Nighttime[3]		Daytime[2]		Nighttime[3]		Daytime[2]		Nighttime[3]	
	L_{max}	L50	L_{max}	L50	L_{max}	L50	L_{max}	L50	L_{max}	L50	L_{max}	L50
Q-1	45	39	44	40	64	48	59	45	No	No	No	No
Q-2	48	41	46	42	64	48	59	45	No	No	No	No
Q-3	51	43	48	45	64	48	59	45	No	No	No	No
Q-4	50	43	48	44	64	48	59	45	No	No	No	No
Q-5	49	41	46	45	64	46	62	45	No	No	No	No
Q-6	56	50	55	48	70	51	65	48	No	No	No	No
Q-7	49	43	48	44	70	51	66	49	No	No	No	No
Q-8	58	52	57	**52**	70	53	67	51	No	No	No	**Yes**
Q-9	60	54	59	**55**	70	55	70	53	No	No	No	**Yes**
Q-10	57	50	55	**52**	70	53	66	47	No	No	No	**Yes**
Q-11	58	49	54	**53**	70	57	69	50	No	No	No	**Yes**
Q-12	60	49	54	**55**	72	58	71	52	No	No	No	**Yes**
Q-13	50	38	43	40	70	55	68	49	No	No	No	No
Q-14	61	40	45	**52**	67	50	65	47	No	No	No	**Yes**
Q-15	46	36	41	36	76	62	75	56	No	No	No	No

Table Source: Table 14 of Appendix H-1

Table Notes: Noise levels that exceed impact thresholds are **bold**.

1. The nearest representative receptors to the Quarry Site are shown on Figure 4.13-2.
2. Daytime hours are 7 a.m. to 10 p.m. This data represent the average daytime noise levels in each category for the 5-day ambient noise monitoring period at the Plant Site locations.
3. Nighttime hours are 10 p.m. to 7 a.m. These data represent the average nighttime noise levels in each category for the 5-day ambient noise monitoring period at the Plant Site locations.
4. Noise Impact Thresholds are described in Table 4.13-9.

As shown in Table 4.13-17, the proposed project daytime noise levels would be in compliance with the significance thresholds at all sensitive receptor locations. Nighttime noise levels at the Quarry Site would be in compliance with the significance thresholds at receptors Q-1 through Q-7, Q-13, and Q-15. However, nighttime noise levels at receptors Q-8 through Q-12 and Q-14 could exceed the significance thresholds during nighttime hours by about 1 to 5 dB.

The exceedance of nighttime noise significance thresholds is a potentially significant impact. The implementation of Mitigation Measure 4.13-2 would require the implementation of noise reduction measures at the Quarry Site. Because the identified exceedance of the significance criteria would be relatively small in magnitude (2 to 5 dB), it is anticipated that, with the implementation of one or more of the noise reduction measures, it would be feasible to reduce operational noise from the Quarry Site to below

the significance thresholds. Therefore, this impact would be less than significant with mitigation.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.13-3: *Quarry Site Noise Reduction*

The operator of the Rockfield Quarry (Operator) shall implement one or more of the following measures to reduce noise from Quarry Site operations:

1) *Limit excavation operations to daytime hours (6 a.m. to 7 p.m.).*
2) *Limit aggregate processing plant operations to daytime hours.*
3) *Limit asphalt and ready-mix operations to daytime hours unless construction contracts specifically require the delivery of materials during nighttime hours.*
4) *Line aggregate hopper drop-points with heavy urethane sheets.*
5) *Ensure that all processing area conveyors are properly lubricated at all times.*
6) *Utilize electric power rather than generators to the maximum extent feasible. If generators must be used, ensure that they are located within acoustic enclosures or property shielded from nearby residences through structures or aggregate stockpiles.*
7) *Equip all mobile plant area equipment with acoustic growler-type backup warning systems, rather than conventional beepers.*
8) *Suspend acoustic curtains around the aggregate processing plant crushers and screen decks (i.e. the loudest components of the processing plant).*
9) *Install an acoustic silencer on the asphalt plant bag house exhaust fan.*
10) *Suspend acoustic curtains around the asphalt plant burner.*
11) *Locate aggregate stockpiles to provide screening of processing area noise sources from view of nearby residences*
12) *Following implementation of the appropriate noise control measures identified above, noise monitoring shall be conducted to confirm the effectiveness of noise control measures and compliance with the applicable noise standards. Noise monitoring shall be conducted by a qualified noise specialist within 1 month of the initiation of the start of operation of the aggregate processing plant at the Quarry Site. Monitoring locations and estimated noise levels at the nearest sensitive receptors to the Plant Site shall be consistent with the noise monitoring locations and methodology included in the "Environmental Noise and Vibration Assessment, July 26, 2021." Changes from the locations and methodology that are determined to be necessary by the qualified noise specialist shall be documented. If noise levels are found to exceed the thresholds, additional noise*

reduction measures shall be implemented, and monitoring conducted until the thresholds achieve acceptable levels. Quarterly reports of noise monitoring and reduction efforts shall be developed and submitted to the County until noise monitoring shows that Quarry Site noise levels have been reduced to below the applicable thresholds. Similarly, within 1 month of the start of operation of the hot-mix asphalt plant, ready-mix cement plant, and portable recycle plant during Stage 2 operations at the Quarry Site, noise monitoring shall be conducted in accordance with the procedures described above. If complaints regarding noise generated by Quarry Site operations are received by the County during Stage 1 or Stage 2 operations, additional noise monitoring shall be conducted in accordance with the procedures described above.

Level of Significance After Mitigation: Less than significant.

Impact 4.13-4: Generate a Substantial Temporary or Permanent Increase in Ambient Noise Levels From Plant Site and Quarry Site Final Reclamation Activities and Post-Reclamation In Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies

Final reclamation activities would occur on the Plant Site at the end of Stage 1 operations and on the Quarry Site at the end of Stage 2 operations. During final reclamation, earthmoving construction equipment and trucks would be used to reconstruct the Plant Site and Quarry Site quarry pit walls to the appropriate slopes and to complete revegetation. Construction equipment and trucks would also be used to break down and remove processing and production facilities, septic systems, and groundwater monitoring and production wells from each site.

Noise would be generated during the removal of the existing processing facilities, final site grading, and revegetation operations. Removal of processing equipment will likely require impact wrenches and cutting tools. Backfilling and final site grading will likely require loaders and motor graders. Revegetation will likely require hydro seed pumping equipment. The noise generation of each of these equipment types and processes is well below that generated by crushing/screening and load-out operations that would be conducted during Stage 1 and Stage 2 operations.

Similarly, the well removal process essentially consists of the removal of the wellhead and filling of the well-boring with slurry. The entire process requires only a few hours per well and, in cases where the wells are in the same immediate vicinity, three wells can be removed and filled in approximately half a day. The noise generation of the process is defined primarily by the slurry pumping operation, which would generate similar noise

levels to a typical concrete pump truck. According to the Federal Highway Administration Roadway Construction Noise Model (RCNM), concrete pump trucks and slurry equipment generate maximum noise levels of approximately 72-75 dBA at 100 feet. When compared to the noise generation of existing on-site operations, the very short-term noise generation of the slurry pumping is expected to be negligible.

As described under Impact 4.13-2 and 4.13-3, Stage 1 and Stage 2 operations would have the potential to generate noise that exceeds significance thresholds by at most 5 dB. Final reclamation activities would utilize minimal equipment relative to Stage 1 and Stage 2 operations at the Plant Site and Quarry Site. Therefore, it is unlikely that noise generated by final reclamation would exceed any noise significance thresholds. In addition, the noise would be temporary, with the majority of reclamation activities completed within one year of the completion of mining at the Quarry Site. Upon completion of final reclamation, the Plant Site and Quarry Site would be converted to open space land use and would not be a source of noise. Consequently, the potential for noise generated during final reclamation activities or during the post-reclamation period to generate a substantial temporary or permanent increase in ambient noise levels would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.13-5: Generate Substantial Groundborne Vibration or Groundborne Noise from Mining Operations and Reclamation Activities (Excluding Blasting)

As described in Section 4.13.1.6, above, measured vibration levels around the perimeter of the Quarry Site were well below the threshold of human perception (65 VdB RMS). Specifically, average vibration levels at the 5 monitoring sites ranged from 23 to 39 VdB RMS. Table 4.13-18, "Vibration Levels of Earthmoving Equipment," shows the reference vibration levels for the types of earthmoving equipment that would be operated on the project sites during mining operations and final reclamation.

Table 4.13-18
Vibration Levels of Earthmoving Equipment

Source	Peak Particle Velocity (PPV) inches/second	RMS Velocity (VdB)
Water Trucks	0.001	57
Scraper	0.002	58
Bulldozer—Small	0.003	58
Backhoe	0.051	82

Source	Peak Particle Velocity (PPV) inches/second	RMS Velocity (VdB)
Excavator	0.051	82
Grader	0.051	82
Loader	0.051	82
Loaded Trucks	0.076	86
Bulldozer—Large	0.089	87

Table Source: Table 15 of Appendix H-1.

The nearest sensitive receptor to either the Plant Site or Quarry Site is Receptor Q-14 (Figure 4.13-2). This receptor is located approximately 275 feet from the proposed excavation operations at the Quarry Site. To estimate the vibration generated by earthmoving equipment at the nearest sensitive receptors, Equation 4 was applied:

$$PPV = PPV_{ref}\left(\frac{25}{D}\right)^{1.5}$$ **Equation 4**

PPV = Estimated vibration at receptor located D feet from the vibration source

PPV_{ref} = Vibration generated by equipment at a distance of 25 feet

D = Distance from vibration source to sensitive receptor (feet)

Using the formula provided above, the vibration that would be generated by a large bulldozer at the nearest sensitive receptor would be approximately 0.003 inches/second PPV, which is equivalent to 58 RMS VdB. This is below the 90 RMS VdB threshold for building damage (Table 4.13-10) and below the 72 RMS VdB threshold for human disturbance (Table 4.13-11). Therefore, the potential for mining and reclamation activities on the Plant Site and Quarry Site (excluding blasting) to generate substantial groundborne vibration would be less than significant.

Because CEMEX heavy trucks currently utilize the local roadway network and no changes to truck haul routes are proposed as part of the project, the proposed project would not generate substantial off-site vibration.

Upon completion of mining operations and final reclamation the project sites would be converted to open space land use and would not be a source of vibration to the surrounding community. Thus, there is no impact.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.13-6: Generate Substantial Groundborne Vibration or Airborne Vibration as a Result of Blasting

A substantial groundborne vibration impact would occur if vibration from blasting resulted in damage to surrounding residential/commercial structures, damage to nearby groundwater wells, disturbance of nearby residents, or destabilization of the San Joaquin River embankment. As described in the "Blasting Significance Thresholds" subsection, of Section 4.13.3.2, above, the following significance thresholds are required to ensure that vibration and airblast from blasting activities do not result in damage or destabilization:

- 0.75 in/sec PPV vibration threshold to prevent damage to residential/commercial structures (this threshold can be adjusted based on frequency of vibration as shown on Figure 4.13-5);
- 2.0 in/sec to prevent damage to wells;
- 0.5 in/sec to prevent destabilization of the San Joaquin River embankment (this threshold can be adjusted based on frequency of vibration as shown on Figure 4.13-6); and
- 0.01295 psi to prevent damage and human disturbance from airblast (provided that blasting is limited to 1 to 2 blast events per day) (this threshold can be adjusted based on frequency of vibration as summarized in Table 4.13-12).

Because maintaining vibration residential/commercial structure threshold of 0.75 in/sec PPV is lower than the 2.0 in/sec PPV threshold to prevent damage to wells, measures taken to maintain vibration below the residential/commercial structure threshold would also be protective of any wells associated with the structure. The closest wells that are not associated with a residential/commercial structure are located further from the blasting area than the nearest residential/commercial structures. Therefore, measures taken to maintain vibration below the residential/commercial structure threshold would also be protective of the nearby wells that are not associated with a residential/commercial structure. In addition, because blasting would occur once to twice a week between the hours of 10 a.m. and 2 p.m., it would not exceed a frequency of more than two blasts per day, and therefore measures taken to maintain vibration below the 0.01295 psi threshold to prevent damage from airblast would be also prevent human disturbance.

The *Blast Impact Analysis* (Appendix H-3) found that to ensure that vibration and airblast remain below the applicable thresholds, reduced maximum explosive weights would be required as blasting approaches the perimeter of the quarry (at progressively closer distances to residential structures and other receptors). Reduced explosive weights can be achieved using smaller diameter blastholes, shorter diameter blastholes, and/or a reduced number of blastholes per delay. With regards to the San Joaquin River

embankment, blasting-generated vibration can also be reduced to meet the 0.5 in/sec threshold by reducing the bench heights within the quarry pit. The analysis and recommendation of the *Blast Impact Analysis* (Appendix H-3) indicate that without appropriate vibration and airblast reduction measures, blast-induced groundborne vibration and airblasts could exceed thresholds and result in damage to surrounding residential/commercial structures, to nearby groundwater wells, or destabilization of the San Joaquin River embankment. The Blast Impact Analysis Peer Review (Appendix H-7) recommends adherence to a blasting program that conform to the OSMRE (1987) *Blasting Guidance Manual* to avoid blast-induced impacts and recommends the implementation of specific mitigation measures that require beginning hard rock blasting towards the center of the Quarry Site, implementing a blast monitoring plan, and preparing and updating a blasting plan annually.

Mitigation Measure 4.13-6 would require implementation of the *Blasting Protocols* (Appendix H-6) which specify that blasting must begin at the center of the Quarry Site so that monitoring of groundborne vibration can occur and be used to verify that predicted maximum ground vibrations are consistent with actual ground vibrations measurements and allow for adjustments in blasting design to occur based on the monitoring results. The *Blasting Protocols* detail requirements for the implementation of a blast monitoring program that includes ground vibration measurements, air overpressure measurements, visual inspection of the San Joaquin River embankment whenever blasting occurs within 1,000 feet of the embankment and depths less than 100 feet within the hard rock portion of the quarry pit (measured at the contact between alluvium and rock). Should significance thresholds be exceeded or signs of instability of the embankment (such as slumping or cracking) be noted, the County must be notified within 48 hours, and a corrective action plan must be developed that identifies changes to the blasting program to prevent future exceedances. The *Blasting Protocols* also detail the requirements for complaint response procedures; record-keeping; and annual reporting of monitoring, complaints investigations, and corrective actions. Lastly, the *Blasting Protocols* would require the operator of the Rockfield Quarry to develop an annual Blasting Plan that includes the proposed blasting designs for areas proposed for blasting each year. The blasting design must be supported by calculations that maintain blast-induced vibrations below the significance thresholds. The plan must be submitted to the County each year for review. With implementation of Mitigation Measure 4.13-6, the potential of the proposed project to generate substantial groundborne vibration or airblast would be less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.13-6: *Blasting Protocols*

The operator of the Rockfield Quarry shall at all times implement the requirements of the "Blasting Protocols" developed October 27, 2020, and updated September 8, 2021, by Vibra-Tech Engineers, Inc. The Blasting Protocols shall be appended to the Mitigation Monitoring and Reporting Program and shall be incorporated into the conditions of approval for the project.

Level of Significance After Mitigation: Less than significant.

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4.14—POPULATION AND HOUSING

This section of the Draft EIR describes the existing population and housing setting on and near the Rockfield Quarry; discusses the relevant federal, state, and regional regulatory considerations; and evaluates impacts to population and housing resulting from construction and operation of the proposed project. This section focuses on the effect of the proposed project on population and housing.

4.14.1 Environmental Setting

4.14.1.1 Population

The unincorporated population of Fresno County was 175,561 in 2019 (California Department of Finance 2019). The nearest city is the City of Fresno, approximately 1 mile south of the Plant Site, with a 2019 population of 531,581 (U.S. Census Bureau 2019b). The census-designated community of Friant is also located approximately 1.5 miles northeast of the Quarry Site with a 2019 population of 604 (U.S. Census Bureau 2019a).

4.14.1.2 Land Use Designations and Zoning

Both the Plant Site and Quarry Site are designated as Agricultural in the Fresno County General Plan and zoned AE-20 (Exclusive Agriculture, 20-acre minimum parcel size).

4.14.1.3 Surrounding Land Uses

Land uses surrounding the Plant Site and Quarry Site are shown on Figure 2-5, "Conditional Use Permits and Surrounding Land Uses," of Chapter 2, "Project Description," of this Draft EIR, and discussed below.

Plant Site

The Plant Site is bounded on the north, west, and south by the Willow Unit Ecological Reserve, owned by California Department of Fish and Wildlife (CDFW). There are several 20-acre farming parcels and other farmland south of the CDFW property. Most of the property north of the Plant Site and generally north of Little Dry Creek is now the Ball Ranch Nature Reserve. The land east of North Friant Road is primarily open grazing land with several 8 to 10-acre rural residential homesites to the southeast.

Quarry Site

The Quarry Site is bounded on the northwest by Lost Lake County Park, and to the northeast by lands that were previously mined for aggregate between Lost Lake County Park and North Friant Road. The property north of the center of the Quarry Site that was previously mined for aggregate was reclaimed as open space, ponds, and riparian habitat, and is now the Beck Ranch Natural Reserve owned by the San Joaquin River

Conservancy. The property north of the northeast portion of the Quarry Site that was previously mined for aggregate was reclaimed as farmland, open space, ponds, and riparian habitat, and includes a rural residence.

The San Joaquin River flows along the west side of the Quarry Site. A residence, farmland, and a winery/farmers market are located to the south of the Quarry Site. Northeast of North Friant Road, there is a residential community overlooking the Quarry Site. A private, gated residential community is located at the base of the foothills southeast of the entrance road to the Quarry Site. Between these two communities, located east of the northeast corner of the Quarry Site, is a rural residence. The remaining area to the east consists of open grazing land.

4.14.2 Regulatory Setting

4.14.2.1 Federal

U.S. Department of Housing and Urban Development

U.S. Department of Housing and Urban Development's (HUD) mission is to create strong, sustainable, inclusive communities and quality affordable homes for all. HUD is working to strengthen the housing market to bolster the economy and protect consumers; meet the need for quality affordable rental homes: utilize housing as a platform for improving quality of life; build inclusive and sustainable communities free from discrimination; and transform the way HUD does business (HUD 2021).

4.14.2.2 State

California Planning and Zoning Law

California counties and cities exercise local planning and land use functions within the framework of the California Planning and Zoning Law (California Government Code section 65000 et seq.). Among other requirements, each local government must adopt a comprehensive, long-term general plan. Local governments have wide latitude in creating a general plan, although each general plan must meet fundamental requirements and include mandatory elements as described in the Government Code. Each element must contain text and descriptions setting forth objectives, principles, standards, policies, and plan proposals; diagrams and maps that incorporate data and analysis; and implementation measures.

Among other mandatory elements, each general plan must include a Housing Element, which identifies and analyzes existing and projected housing needs and states "goals, policies, quantified objectives, financial resources, and scheduled programs for the programs for the preservation, improvement, and development of housing." (Government Code Section 65583.) The Government Code provides specific requirements

for implementing and amending housing elements within Sections 65580 through 65589.11, commonly referred to as the Housing Element Law. Among other things, local governments are required to identify existing and future needs in a Regional Housing Needs Assessment (RHNA).

The California Department of Housing and Community Development is the state agency that oversees housing in California. HCD's mission is to "[p]rovide leadership, policies and programs to preserve and expand safe and affordable housing opportunities and promote strong communities for all Californians" (HCD 2021). In 1977, HCD adopted regulations known as the Housing Element Guidelines, which are to be followed by local governments in the preparation of local housing elements. Since that time, further housing element requirements have been codified in the Planning and Zoning Law, including multiple revisions to the Housing Element Law.

4.14.2.3 Local

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) Housing Element includes policies related to population, employment, and housing. The policy applicable to the proposed project is listed below.

Public Facilities and Services Element

Housing Element

Section G. Housing and Neighborhood Preservation, Maintenance, and Improvement

Goal H-G: To promote the safety, stability, character and integrity of existing neighborhoods through maintenance and improvement of the condition of the existing housing stock and the neighborhoods in which it is located.

Policy H-G.5: The County shall manage development of land within and adjacent to existing neighborhoods to avoid adverse impacts on the living environment.

4.14.3 Significance Criteria and Analysis Methodology

4.14.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to population and housing if it would:

a) Induce substantial unplanned population growth in an area, either directly or indirectly; or
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

4.14.3.2 Analysis Methodology

Census data, the proposed Surface Mining and Reclamation Plan, and Conditional Use Permit application materials were reviewed to determine the proposed project's potential impacts related to population and housing. Potential impacts related to population and housing were determined qualitatively by comparing Stage 1, Stage 2, and reclamation stage conditions to existing conditions. In determining the level of significance, this analysis assumes that the proposed project would comply with relevant state and local ordinances and regulations, as well as the general plan policies presented above.

4.14.4 Project Impacts and Mitigation Measures

Impact 4.14-1: Induce Substantial Unplanned Population Growth in an Area, Either Directly or Indirectly

There are currently 55 full-time employees at the Rockfield facility. In addition, there are 22 employees at CEMEX's concrete plant in South Fresno, which is supplied with aggregate products produced at the Plant Site, and 15 employees at CEMEX's administrative office in Fresno. Approval of the Project would allow the continued employment of the existing 55 on-site and 37 off-site full-time employees and an estimated 5 additional full-time on-site employees.

Therefore, the project would not substantially induce population growth in the area. The project does not include a proposal for new homes or businesses and would add a negligible number of new workers. No new public roads or public services would be installed that could induce population growth. The impact on population grown would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.14-2: Displace Substantial Numbers of Existing People or Housing, Necessitating the Construction of Replacement Housing Elsewhere

The project would not result in the removal of existing housing and would not create a need for the construction of new housing. No impact would occur regarding displacement of people or housing.

Level of Significance: No Impact.

Mitigation Measure: None required.

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4.15—PUBLIC SERVICES

This section of the Draft EIR describes the existing setting for public services on and near the Rockfield Quarry; discusses the relevant federal, state, and regional regulatory considerations; and evaluates impacts to public services resulting from construction and operation of the proposed project. This section focuses on the effect of the proposed project on public services.

4.15.1 Environmental Setting

Fire Protection

Fire protection services in the vicinity of the Rockfield facility are provided by the Fresno County Fire Protection District. The Fresno County Fire Protection District serves a population of more than 220,000 in a service area encompassing approximately 2,655 square miles. In cooperation with the California Department of Forestry and Fire Protection (CAL FIRE), the Fresno County Fire Protection District provides fire suppression, emergency medical service, rescue, fire prevention, and education from 13 staffed fire stations and five paid call firefighter stations. The nearest fire stations are Station 17, located approximately 2.5 miles southeast of the Plant Site at 10512 North Maple Avenue in Fresno, and the Millerton Fire Station, located approximate 2.5 miles northeast of the Quarry Site at 4091 Millerton Road in Friant.

Law Enforcement Services

The Fresno County Sheriff's Department provides law enforcement services to the unincorporated areas of the County and several incorporated cities by contract. Patrol services are divided into four patrol areas, each commanded by a lieutenant who supervises field services from a substation located in each of the areas. Both the Plant Site and Quarry Site are located within Patrol Area 2. Area 2 is comprised of the unincorporated portions of metropolitan Fresno County. Area 2 serves several communities within the boundaries of American Avenue to the Madera County line and Chateau Fresno to McCall Avenue. Some of the communities served are Calwa, Malaga, Mayfair, Sunnyside, Fig Garden and Tarpey. Area 2 personnel provide 24-hour patrol and detective services, crime prevention, and vehicle abatement, as well as a host of community liaison functions. The Sheriff's Department Headquarters is located within Area 2 at 2200 Fresno Street in Fresno, approximately 13 miles southwest of the Plant Site (Fresno County Sheriff's Department 2021a, 2021b, 2021c).

Schools

There are no schools within the vicinity of the Plant Site or Quarry Site. The nearest schools are Fugman Elementary School and Copper Academy Preschool, both located

approximately 2.5 miles southwest of the Plant Site, and Hillside Elementary School, located approximately 2 miles west of the Quarry Site across the San Joaquin River in Madera County.

Parks

Background information regarding parks and recreational services can be found in Section 4.16, "Recreation," of this Draft EIR. Below is a summary of existing park facilities near the project sites.

The Quarry Site is bounded to the north by Lost Lake County Park. The property line between Lost Lake Park and the Quarry Site is fenced with six-foot high chain-link fencing. The park is approximately 425 acres and includes Lost Lake Park Nature Trail, Beck-Lost Lake Addition, and Lost Lake Recreation Area. Within a half mile west and south of the Quarry Site are Ledger Island and Ball Ranch, respectively.

The Plant Site is surrounded by San Joaquin Ecological Reserve and Ball Ranch. Within a half mile is also the Willow Unit Ecological Reserve. Friant Open Space, as labeled on the County's Fresno County Parks and Access Facilities Map, is a linear open space that includes the Lewis S. Eaton trail, which connects the City of Fresno's Woodward Park to the San Joaquin River Parkway and Conservation Trust building at 11605 Old Friant Road (Fresno County n.d.).

Libraries

There are no public libraries within the vicinity of the Plant or Quarry Sites. The nearest library is Woodward Park Regional Library, located approximately 4.1 miles southwest of the Plant Site at 944 East Perrin Avenue in the City of Fresno.

4.15.2 Regulatory Setting

No federal regulations regarding public services apply to the project. Relevant state and local programs and policies are discussed below.

4.15.2.1 State

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment," the California Occupational Safety and Health Administration (Cal- OSHA) has established minimum standards for fire suppression and emergency medical services (EMS). The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing

requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all firefighting and emergency medical equipment.

City Emergency Response/Evacuation Plans

The State of California passed legislation authorizing the California Governor's Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the state withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

California Fire Code

The California Fire Code (CFC) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the CFC include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The CFC also contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards, fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise buildings, childcare facility standards, and fire suppression training.

4.15.2.2 Local

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) includes the following policies relating to public services that apply to the proposed project:

Public Facilities and Services Element

Section A. General Public Facilities and Services

Goal PF-A: To ensure the timely development of public facilities and to maintain an adequate level of service to meet the needs of existing and future development.

Policy PF-A.2: The County shall ensure through the development review process that public facilities and services will be developed, operational, and available to serve new development. The County shall not approve

new development where existing facilities are inadequate unless the applicant can demonstrate that all necessary public facilities will be installed or adequately financed and maintained (through fees or other means).

Policy PF-A.3: The County shall require new industrial development to be served by community sewer, stormwater, and water systems where such systems are available or can feasibly be provided.

Section B. Funding

Goal PF-B: To ensure that adopted facility and service standards are achieved and maintained through the use of equitable funding methods.

Policy PF-B.1: The County shall require that new development pays its fair share of the cost of developing new facilities and services and upgrading existing public facilities and services and upgrading existing public facilities and services. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing) and when alternative sources of funding can be identified to offset foregone revenues.

Section G. Law Enforcement

Goal PF-G: To protect life and property by deterring crime and ensuring the prompt and efficient provision of law enforcement service and facility needs to meet the growing demand for police services associated with an increasing population.

Policy PF-G.6: The County shall promote the incorporation of safe design features (e.g., lighting, adequate view from streets into parks) into new development by providing Sheriff Department the opportunity to review development proposals.

Section H. Fire Protection and Emergency Medical Services

Goal PF-H: To ensure the prompt and efficient provision of fire and emergency medical facility and service needs, to protect residents of and visitors to Fresno County from injury and loss of life, and to protect property from fire.

Policy PF-H.2: Prior to the approval of a development project, the County shall determine the need for fire protection services. New development in unincorporated areas of the County shall not be approved unless adequate fire protection facilities and services acceptable to the Public Works and

Planning Director in consultation with the appropriate fire district are provided.

Policy PF-H.5: The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.

Policy PF-H.10: The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the California Fire Code and other State and local ordinances.

4.15.3 Significance Criteria and Analysis Methodology

4.15.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to public services if it would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection,
b) Police protection,
c) Schools,
d) Parks, and
e) Other public facilities.

4.15.3.2 Analysis Methodology

Public services for the unincorporated area of Fresno County, the proposed Surface Mining and Reclamation Plan, and Conditional Use Permit application materials were reviewed to determine the proposed project's potential impacts to public services. Potential impacts related to public services were determined qualitatively by comparing Stage 1, Stage 2, and reclamation stage conditions to existing conditions. In determining the level of significance, this analysis assumes that the proposed project would comply with relevant state and local ordinances and regulations, as well as the general plan policies presented above.

4.15.4 Project Impacts and Mitigation Measures

Impact 4.15-1: Result in Substantial Adverse Physical Impacts Associated with the Provision of New or Physically Altered Governmental Facilities, Need for New or Physically Altered Governmental Facilities, the Construction of Which Could Cause Significant Environmental Impacts, in Order to Maintain Acceptable Service Ratios, Response Times or Other Performance Objectives for Any of the Public Services: Fire Protection, Law Enforcement, Schools, Parks, Other Public Facilities

As discussed in Impact 4.14-1, the project would not directly or indirectly induce substantial population growth in the area. The project would be an expansion of an existing mining operation and would add a negligible number of new workers. Further, security fencing is proposed along any property line abutting a public right-of-way and around any extraction area where slopes steeper than two feet horizontal to one foot vertical are maintained. In addition, the project would add security fencing around the perimeter of the Plant Site where it is not currently installed. The proposed fencing would prevent trespassing and accidents reducing calls for emergency services. As the project would not significantly increase calls for emergency services, new school enrollments, or demand for parks or other public facilities, the construction of new or physically altered government facilities is not anticipated. This impact would be less than significant.

Level of Significance: Less than Significant.

Mitigation Measure: None required.

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4.16—RECREATION

This section of the Draft EIR describes existing recreational resources and opportunities near the Rockfield Quarry, summarizes applicable jurisdictional laws and regulations, and presents the significance criteria and thresholds for the evaluation of impacts to recreation. This section then describes analysis methodologies and identifies the potential impacts to recreation from the proposed project. Measures to mitigate potential impacts are recommended, as appropriate.

4.16.1 Environmental Setting

The environmental setting for this analysis includes the project sites and nearby recreational facilities. Recreational opportunities in Fresno County range from scenic to functional, local to national, and urban to wilderness. They also often include significant natural resources. The Fresno County Parks Division holds primary responsibility to provide, develop, and maintain regional parks and landscaped areas in the County, but the California Department of Fish and Wildlife (CDFW), the San Joaquin River Conservancy (SJRC), a state agency; and the San Joaquin River Parkway and Conservation Trust (Parkway Trust), a private trust, also manages several recreational areas in the project vicinity.

Several recreational facilities are located within two miles of at least one of the project sites, including the San Joaquin Fish Hatchery, Lost Lake Recreation Area, Lewis S. Eaton Trail, and Ball Ranch. Recreational facilities adjacent to or in the immediate vicinity of the project sites are described in Table 4.16-1, "Recreation Facilities Near the Project Sites."

Table 4.16-1
Recreation Facilities Near the Project Sites

Recreation Facility Name	Facility Type	Facility Size	Managing Agency	Distance from Plant Site[1]	Distance from Quarry Site
San Joaquin River Ecological Reserve-Willow Unit	Ecological reserve, no public access	238 acres	CDFW	0 mi	1.1 mi S
Rank Island, Joaquin River Ecological Reserve	Ecological reserve, no public access	270 acres	CDFW	1.4 mi SW	2.6 mi SW
Lost Lake Park (including Lost Lake Fishing Area and Lost Lake Park Nature Trail	Public Recreation Area	268 acres[2]	Fresno County/CDFW	2.1 mi N	0 mi N

Recreation Facility Name	Facility Type	Facility Size	Managing Agency	Distance from Plant Site[1]	Distance from Quarry Site
San Joaquin Fish Hatchery	Fish Hatchery, limited public access	35 acres	CDFW	3.8 mi N	1.9 mi N
Lewis S. Eaton Trail/Friant Open Space	Parkway Trail	6.0 mi/141 acres	Fresno County/ Fresno City	1.8 mi SW	3.18 mi SW
Beck-Lost Lake Addition	Public land, limited public access	106 acres	SJRC	1.9 mi N	0 mi N
Ledger Island	Public land, limited public access	161 acres[2]	SJRC	0.8 mi N (across San Joaquin River)	0.25 mi W (across San Joaquin River)
Ball Ranch	Public land, limited public access	358 acres[2]	SJRC	0.1 mi N	0.5 mi S
Coke Hallowell Center for River Studies	Private land, public access by permission	20 acres[2]	Parkway Trust	1.8 mi SW	3.18 mi SW
Owl Hallow	Private land, public access by permission	5 acres	Parkway Trust	1.9 mi SW	3.2 Mi SW
Peck Ranch	Private land, public access by permission	76 acres	Parkway Trust	0.7 mi N	0.14 mi S
Dragonfly Golf Club	Private Golf Club	320 acres	Dragonfly Golf Club	0.7 mi W (across river)	1.7 mi SW (across river)

Table Source: GreenInfo Network 2007, 2020; SJRPCT 2021; CDFW 2021a, 2021c; Vaughan 2021, SJRC 2021.
Table Notes:
1. Distances are estimates made using Google Earth and park maps provided by respective agencies.
2. Size provided by SJRC database & California Protected Areas Database

4.16.2 Regulatory Setting

No federal or state regulations relevant to recreational facilities apply to the project. Relevant regional and local programs and policies are discussed below.

San Joaquin River Parkway Master Plan

The SJRC's San Joaquin River Parkway Master Plan establishes standards for the development of low impact recreational uses, education, and protection of natural resources for the San Joaquin River and surrounding areas. The fundamental goals of the Master Plan are to (1) Provide for conservation, education, and recreation, particularly a continuous trail, in a cooperative manner with affected landowners, and (2) Protect irreplaceable natural and cultural resources in a way that will also meet recreational and

educational needs. A discussion of the Project's consistency with the policies established by the San Joaquin River Parkway Master Plan, as adopted in the Fresno County General Plan, is found in Section 4.11, "Land Use and Planning," Table 4.11-1, "Project Consistency with Local Planning Documents," of this Draft EIR.

Fresno County General Plan

The Fresno County General Plan Open Space and Conservation Element (Fresno County 2024) discusses policies to enhance recreational opportunities in the County by encouraging further development of public and private recreational opportunities. One policy within Section H, "Parks and Recreation," provides a quantitative goal for the provision of parkland:

Open Space and Conservation Element

Section H. Parks and Recreation

Goal OS-H: To designate land for and promote the development and expansion of public and private recreational facilities to serve the needs of residents and visitors.

Policy OS-H.2: The County shall strive to maintain a standard of five (5) to eight (8) acres of County-owned improved parkland per one thousand (1,000) residents in the unincorporated areas.

Section I. Recreational Trails

Goal OS-I: To develop a system of hiking, riding, and bicycling trails and paths suitable for active recreation and transportation and circulation.

Policy OS-I.13: The Fresno County Department of Public Works and Planning shall maintain trails located within County parks along, but separated from the roadway, irrigation canals, flood control channels, abandoned railroad rights-of-way or easements, utility easements, and along floodplains.

Transportation and Circulation Element

Section A. Streets and Highways

Goal TR-A: To plan and provide a unified, multi-modal, coordinated, and cost-efficient countywide street and highway system that ensures the safe, orderly, and efficient movement of people and goods, including travel by walking, bicycle, or transit.

Policy TR-A.14: The County, where appropriate, shall coordinate the multi-modal use of streets and highways to ensure their maximum efficiency and

connectivity and shall consider the need for transit, bikeway, and recreational trail facilities when establishing the Ultimate Right-of-way Plan and Precise Plans of streets and highways.

Policy TR-A.15: The County shall develop and maintain a program to construct bikeways and recreation trails in accordance with the adopted Regional Bicycle and Recreational Trail Masters Plan. The County shall seek funding for construction and maintenance of bicycle facilities and trails.

Section D. Bicycle Facilities

Goal TR-D: To plan and provide a safe, continuous, and easily accessible bikeway system that facilitates the use of the bicycle as a viable alternative transportation mode and as a form of recreation and exercise.

Policy TR-D.1: The County shall implement a system of recreational, commuter, and inter-community bicycle routes in accordance with the Regional Bikeway Plan described in the Circulation Diagram and Standards section and depicted in Figure TR-2 [of the Fresno County General Plan]. The plan designates bikeways between cities and unincorporated communities, to and near major traffic generators such as recreational areas, parks of regional significance, and other major public facilities, and along recreational routes.

Policy TR-D.5: The County shall require as a condition of land development that adequate rights-of-way or easements are provided for designated bikeways or trails.

Fresno County Regional Active Transportation Plan

First approved in 2018 and updated by the Fresno Council of Governments Policy Board on May 30, 2024, the Fresno County Regional Active Transportation Plan (ATP) is a comprehensive, regional document that identifies key bicycle and pedestrian projects in Fresno County. This document also assists agencies with acquiring funding and implementing the projects. The ultimate goal of the plan is to add 1,909 miles of bike paths, lanes, and routes; to add 89 miles of sidewalks; and to improve 80 intersections and street crossing and pedestrians (COG 2018)

4.16.3 Significance Criteria and Analysis Methodology

4.16.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to recreation if it would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.16.3.2 Analysis Methodology

Recreational opportunities located in the project vicinity, the proposed Surface Mining and Reclamation Plan, and Conditional Use Permit application materials were reviewed to determine the proposed project's potential impacts to recreation. Potential impacts related to recreation were determined qualitatively by assessing proposed activities in light of the environmental and regulatory settings.

4.16.4 Project Impacts and Mitigation Measures

Impact 4.16-1: Increase Use of Existing Neighborhood and Regional Parks or Other Recreational Facilities Such that Substantial Physical Deterioration of the Facility Would Occur or be Accelerated

Increases in the use of recreational facilities typically are associated with either substantial increases in population or a substantial reduction in the availability of existing parks or recreational facilities. There are no parks or recreational facilities within the project sites. However, as described in Table 4.16-1, the Plant Site and Quarry Site are located within the immediate vicinity of several parks and recreational facilities. The closest recreational facility to the Plant Site is the Ball Ranch about 500 feet to the north of the Plant Site. The closest recreational facilities to the Quarry Site are Lost Lake Park which is adjacent to the northern Quarry Site boundary and Sumner Peck Ranch and Ball Ranch beginning about 750 feet south of the Quarry Site.

Project activities would not result in the removal of any existing parks or recreational facilities. As described in Section 4.15, "Population and Housing," of this Draft EIR, construction, operation, and reclamation of the project sites would not cause a substantial increase in local population, either directly or indirectly. The project would add five workers to the Project sites, and it is anticipated that these workers would be hired locally.

As the project would not substantially increase the local population, there would be no additional use of existing recreational facilities, and no physical deterioration would occur.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.16-2: Inclusion of Recreational Facilities or Requiring the Construction or Expansion of Recreational Facilities Which Might Have an Adverse Physical Effect on the Environment

The project includes the offer of easements along the eastern boundary of the Plant site and along the western boundary of the Quarry site. Such easements have the potential to facilitate connection of about three (3) miles of planned trails in the San Joaquin River Parkway Master Plan. Development of these potential future trails was evaluated programmatically in the San Joaquin River Parkway Master Plan Update EIR (SCH No. 2013061035) certified in 2018. Thus, development of the trails is not evaluated further in this EIR. Should these trails be proposed for development in the future, project-level CEQA review would be required prior to construction.

As described in Section 4.15 and Section 7.4, "Growth Inducing Analysis Overview," of Chapter 7, "Other CEQA Topics," of this Draft EIR, the proposed project would not result in local population growth and would not affect the County's ability to provide recreational facilities at the ratio described in General Plan Policy OS-H.2. Therefore, the proposed project would not result in the construction or expansion of recreational facilities.

Level of Significance: Less than significant.

Mitigation Measure: None required.

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4.17—TRANSPORTATION

This section of the Draft EIR describes existing transportation conditions near the Rockfield Quarry, summarizes applicable jurisdictional laws and regulations associated with transportation, and presents the significance criteria for transportation-related environmental impacts. This section then describes analysis methodologies and identifies the potential transportation effects of the proposed project. The transportation evaluation includes estimates of vehicle trip generation and distribution, estimates of vehicle miles travelled (VMT), and an assessment of potential traffic impacts. Measures to mitigate potential transportation impacts are recommended, as appropriate.

The information in this section is based on Applicant-prepared studies, Applicant responses to peer review comments, and publicly available sources. The Applicant-prepared studies used are:

- *Traffic Impact Study, Proposed CEMEX Rockfield Modification Project, West Side of Friant Road Between Fresno and Friant, Fresno County, California*. Prepared by Peters Engineering Group. November 15, 2019 (Appendix I-1, "Traffic Impact Study")
- *Letter Addendum to Traffic Impact Study dated November 15, 2019, Estimates of Vehicle Miles Travelled (VMT), Proposed CEMEX Rockfield Modification Project, West Side of Friant Road Between Fresno and Friant, Fresno County, California.* Prepared by Peters Engineering Group. March 20, 2020 (Appendix I-2, "Estimates of Vehicle Miles Travelled")

The Applicant responses to peer review comments are:

- *Response to Comments on Traffic Impact Study, Proposed CEMEX Rockfield Modification Project, Fresno County, California*. Prepared by Peters Engineering Group. December 17, 2020 (Appendix I-3, "Response to Comments on Traffic Impact Study")
- *Additional Responses to Comments on Traffic Impact Study, Proposed CEMEX Rockfield Modification Project, Fresno County, California*. Prepared by Peters Engineering Group. March 31, 2021 (Appendix I-4, "Additional Responses to Comments on Traffic Impact Study")

The *Traffic Impact Study* (Traffic Impact Study) and *Letter Addendum to Traffic Impact Study dated November 15, 2019, Estimates of Vehicle Miles Travelled (VMT)* (VMT Addendum) was peer reviewed by County-retained VRPA Technologies, Inc. (VRPA) in September 2020. The peer review letter report and VRPA's comments are on file with the County. A *Response to Comments on Traffic Impact Study* (Response to Comments) was completed by

Peters Engineering Group in December 2020. VRPA provided an additional comment on the Response to Comments in February 2021. An *Additional Responses to Comments on Traffic Impact Study* (Additional Response to Comments) was completed by Peters Engineering Group in March 2021. Both the Response to Comments and Additional Response to Comments adequately addressed the peer reviewer's comments and questions.

It should be noted that the Traffic Impact Study includes an evaluation of the proposed project's effects on traffic delay on public roads. Traffic delay has been a traditional measure of project traffic impacts under CEQA for several decades, but recent changes to CEQA direct public agencies to assess transportation impacts based on VMT instead of traffic delay-based metrics such as roadway capacity and level of service (LOS) performance measures. The Traffic Impact Study is included as Appendix I-1 to this EIR and provides information pertaining to anticipated changes to LOS that could occur as a result of the proposed project and measures to reduce these traffic congestion effects. Section 4.11, "Land Use," of this Draft EIR, analyzes information pertaining to LOS and consistency with General Plan policies addressing roadway capacity and traffic delay.

This EIR discusses anticipated VMT associated with the proposed project based on the analysis of the VMT Addendum (Appendix I-2) and the Additional Response to Comments (Appendix I-4).

4.17.1 Environmental Setting

4.17.1.1 Regional Setting

The Rockfield Quarry is located in the San Joaquin Valley of California (shown on Figure 1-1, "Regional Location," in Chapter 1, "Introduction," of this Draft EIR). The principal regional vehicular transportation corridors are State Route 41 located approximately 3 miles west of the Rockfield Quarry, State Route 168 located approximately 6.5 miles southeast of the Rockfield Quarry, State Route 180 located approximately 11 miles south of the Rockfield Quarry, State Route 99 (Golden State Highway) located approximately 12 miles west of the Rockfield Quarry and Interstate-5 (West Side Freeway) located approximately 50 miles west of the Rockfield Quarry.

4.17.1.2 Project Location and Access

The Rockfield Quarry is located on two properties in unincorporated Fresno County: the Plant Site and the Quarry Site. Both properties are located north of the City of Fresno, between North Friant Road to the east and the San Joaquin River to the west, (shown on Figure 1-2, "Site Location," in Chapter 1 of this Draft EIR). Both the Plant Site and Quarry Site are accessed from North Friant Road, which is a four-lane divided road with a speed

limit of 65 mile per hour (mph) in the vicinity of the project sites. There are existing southbound acceleration lanes and northbound left-hand turn pockets for use by truck traffic at both the Plant Site and Quarry Site access roads. There are no railroads located near the project sites.

4.17.1.3 Local Road Network

The Traffic Impact Study (Appendix I-1) determined a study area based on the anticipated proposed project traffic trip distribution, the size of the proposed project, and the existing conditions in the vicinity of the proposed project sites. The traffic study area includes 15 intersections shown on Figure 4.17-1, "Traffic Study Intersections and Project Trip Distribution Percentages."

Several major roadways are located within the traffic study area. These roadways are described below and shown on Figure 4.17-1.

- **Friant Road**. Friant Road is a generally a north-south roadway, with some portions trending northeast-southwest. Friant Road south of Lost Lake Park is designated as an expressway, and Friant Road north of Lost Lake Park is designated as an arterial in the *Fresno County General Plan* (Fresno County 2024). Lost Lake Park abuts the Quarry Site to the north. Therefore, Friant Road, adjacent to both project sites, is a designated expressway. Friant Road is generally a four-lane divided road, including adjacent to the project sites, with some six-lane portions south of Fort Washington Road in the City of Fresno. Speed limits are 65 mph in the vicinity of the project sites, with a 45-mph section in the town of Friant, 55 and 60 mph sections south of Willow Avenue, and both 45 and 50 mph sections in the City of Fresno.
- **Willow Avenue**. Willow Avenue intersects Friant Road just south of the Plant Site. Willow Avenue is a generally north-south roadway designated as an arterial in the *Fresno County General Plan* (Fresno County 2024) and a super arterial in the *Fresno General Plan* (City of Fresno 2014). Willow Avenue north of Copper Avenue and south of Friant Road is generally a two-lane undivided road. Speed limits are not posted; the prima facie speed limit appears to be 55 mph.
- **Road 206/North Fork Road**. Road 206/North Fork Road intersects Friant Road north of the project sites (the portion of the roadway between Friant Road and between Friant Road to the east and the Madera Canal to the west is North Fork Road, west of the Madera Canal, the roadway is Road 206). Road 206 is a generally a northwest-southeast roadway designated as an expressway in the *Fresno County General Plan* (Fresno County 2024) and designated as a secondary arterial in the

Rio Mesa Area Plan (Madera County 1995). Road 206 is a two-lane undivided road. Speed limits are not posted; the prima facie speed limit appears to be 55 mph.

- **Road 145/State Route 145**. Road 145 intersects Road 206 northwest of the project sites in Madera County. Road 145 is designated State Route 145 west of the intersection with State Route 41. Road 145/State Route 145 is an east-west roadway designated as a secondary arterial in the *Rio Mesa Area Plan* (Madera County 1995). Road 145/State Route 145 is a two-lane undivided road. Speed limits are not posted; the prima facie speed limit appears to be 55 mph.

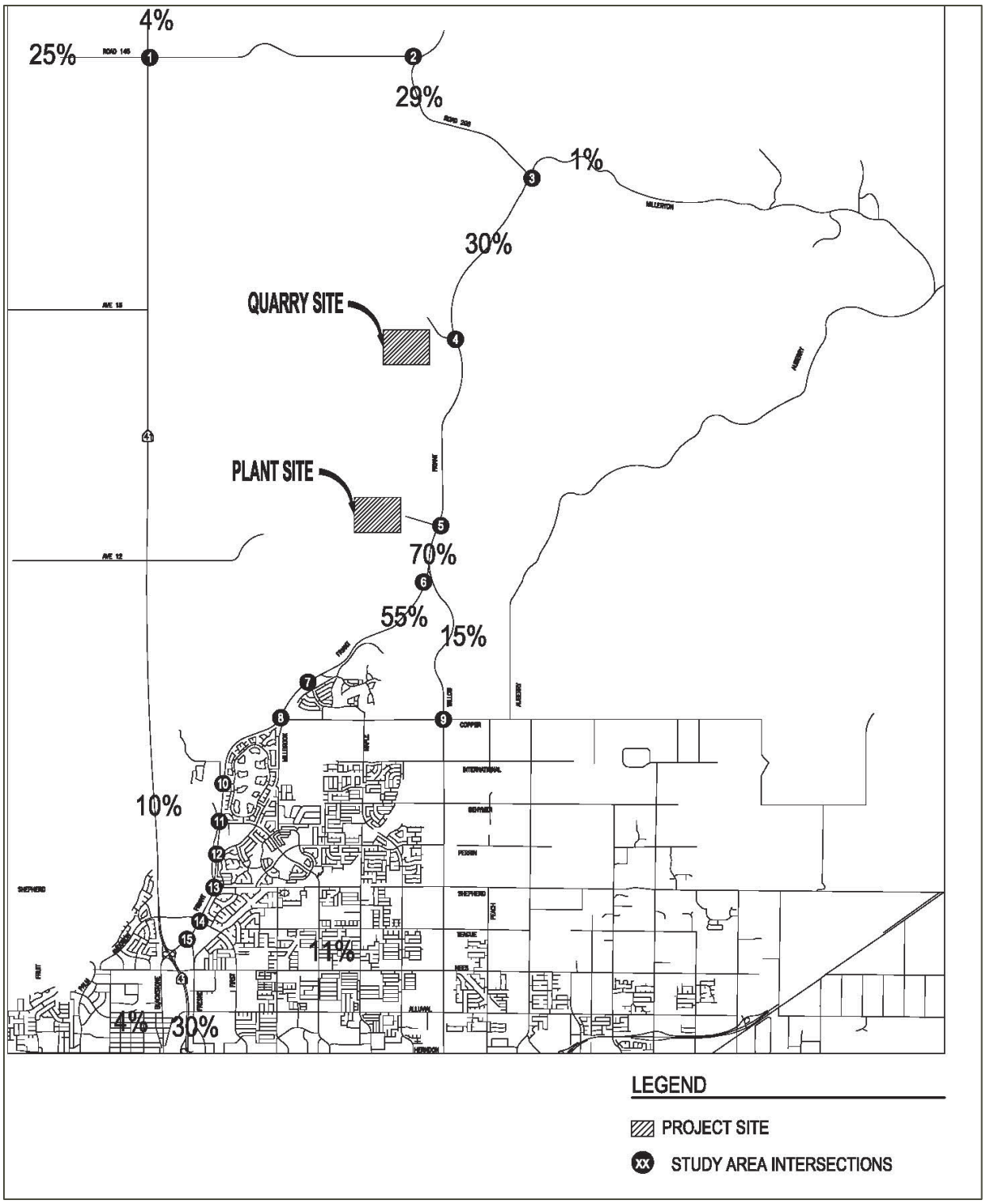
4.17.1.4 Existing Bicycle and Pedestrian Facilities

Pedestrian facilities generally do not exist along the road segments in the traffic study area, with the exception of pedestrian accommodations at signalized intersections and sidewalks south of Audubon Drive in the urbanized areas of the City of Fresno.

The California Department of Transportation (Caltrans) *Highway Design Manual* (Caltrans 2020) classifies bicycle facilities as follows:

- Class I Bikeway (Bike Path): Off-street facilities that provide exclusive use for non-motorized travel, including bicyclists and pedestrians.
- Class II Bikeway (Bike Lane): On-street facilities that use striping, stencils, and signage to denote preferential or exclusive use by bicyclists.
- Class III Bikeway (Bike Route): On-street pavement markings or signage that connect the bicycle roadway network along corridors that do not provide enough space for dedicated lanes on low-speed and low-volume streets.
- Class IV Bikeway (Separated Bikeways): Physically separated bicycle facilities that are distinct from the sidewalk and designed for exclusive use by bicyclists. Commonly known as "cycle tracks," they are located within the street right-of-way, but provide similar comfort when compared to Class I Bikeways.

Class II Bike Lanes exist within the traffic study area along Friant Road (northbound and southbound) and Willow Avenue (northbound and southbound). A Class I Bike Path, including the Lewis Eaton Trail, exists on the west side of Friant Road from Fresno Street to the Riverview Ranch (located approximately 1 ¾ miles south of the Plant Site). Bicycle facilities do not exist on Road 206 or Road 145/State Route 145.



SOURCE: Peter Engineering Group 2019; arranged by Benchmark Resources in 2022

Traffic Study Intersections and Project Trip Distribution Percentages
ROCKFIELD MODIFICATION PROJECT
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Figure 4.17-1

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4.17.1.5 Existing Transit Service

Fresno Area Express provides bus service in the City of Fresno. Bus service is not currently provided to the project sites or the vicinity. The nearest Fresno Area Express route is Route 58 located approximately 4 miles south of the Plant Site (Fresno Area Express 2021). The Fresno County Rural Transit Agency (Rural Transit Agency) provides general public transit service to rural communities throughout Fresno County. The Rural Transit Agency does not have regular routes that serve the project sites or the vicinity. The nearest Rural Transit Agency transit stop is located within the Town of Friant (Rural Transit Agency 2018).

4.17.2 Regulatory Setting

4.17.2.1 Federal

The U.S. Department of Transportation provides funding and oversight of the federal highway system. The proposed project would not require any federal action because it is not located near an interstate highway. Therefore, no specific federal regulations pertain to this traffic analysis.

4.17.2.2 State

California Department of Transportation

Caltrans has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on California highways. Fresno County is under the jurisdiction of Caltrans District 6. Caltrans facilities located within the traffic study area for the proposed project are State Routes 41 and 145. The following Caltrans regulations apply to the potential transportation impacts of the proposed project:

- California Vehicle Code, Division 15, Chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.
- California Street and Highway Code, Sections 660-711, 670-695. Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

CEQA Section 21099(b)(1) (Senate Bill 743)

Under SB 743, CEQA Section 21099(b)(1) requires that the California Governor's Office of Planning and Research (OPR) develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." CEQA Section 21099(b)(2) states that upon certification of the revised guidelines for determining transportation impacts pursuant to Section 21099(b)(1), automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA. In December 2018, OPR published the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory) recommending that transportation impacts for projects be measured using a VMT metric (OPR 2018).

4.17.2.3 Local

Zoning Ordinance of Fresno County—Land Use and Planning

The Zoning Ordinance of Fresno County—Land Use and Planning, last amended June 2018, has policies and ordinances related to transportation. Specifically, Section 858, "Regulations for Surface Mining and Reclamation in All Districts," contains the following countywide development standards related to transportation that apply to mining projects in the County.

Section 858—Regulations for Surface Mining and Reclamation in All Districts

H. Mining and Reclamation Standards

The standards for surface mining operations and reclamation shall be as follows:

6. The first one hundred (100) feet of access road(s) intersecting with a County maintained road shall be surfaced in a manner approved by the Board and shall not exceed a two (2) percent grade and shall have a width of not less than twenty-four (24) feet.
7. Where an access road intersects a County-maintained road, it shall be improved with a driveway approach constructed to Fresno County Standards.
9. Traffic control and warning signs shall be installed as required by the Commission at the intersection of all private roads with public roads. The placement, size, and wording of these signs shall be approved by the Director.

Fresno County Regional Bicycle & Recreational Trails Master Plan

The purpose of the *Fresno County Regional Bicycle & Recreational Trails Master Plan* (Bicycle Master Plan) (Fresno County 2013) is to provide a continuous system of safe bikeways and recreational trails that encourage non-motorized trips. The specific goals of the Bicycle Master Plan are to:

- Create a comprehensive and safe system of bikeways, bicycle facilities, and trails that focus on travel to work, commercial and government centers, schools, and recreational areas in the County of Fresno.
- Create a system of bicycle facilities that enables more multimodal trips with other forms of transportation by bicyclists.
- Increase bicycle ridership by implementing bicycle facility improvements.
- Promote bicycle safety, reduce the number of bicycle accidents, and increase recreational opportunities for the general public.
- Implement the Bicycle Master Plan as part of the Fresno County General Plan Transportation and Circulation Element.

The Bicycle Master Plan indicates that Class I Bike Paths are planned along several roadways that would be used by vehicle and truck trips generated by the proposed project. This includes a Class I Bike Path along Friant Road and the San Joaquin River from Madera Avenue west of the City of Fresno to the Town of Friant, a Class I Bike Path on Copper Avenue from Willow Avenue to Friant Road, and a Class I Bike Path on Willow Avenue from Friant Road to Copper Avenue. These projects are identified as "unranked", indicating that they are being considered, but not a priority due to environmental, right-of-way, and/or jurisdictional issues.

Madera County Active Transportation Plan

The *Madera County Active Transportation Plan* (Madera County ATP) provides the framework for a comprehensive bicycle and pedestrian network across Madera County (Madera County 2018). The Madera County ATP indicates that Class I Bike Paths and Class II Bike Lanes are planned along several roadways that would be used by vehicle and truck trips generated by the proposed project. Class I Bike Paths are proposed along State Route 145 west of State Route 41, and along State Route 41 north and south of Road 145. A Class II Bike Lane is proposed along North Fork Road/Road 206 between Friant Road and Road 145/State Route 145.

San Joaquin River Parkway Master Plan Update

The San Joaquin River Parkway (Parkway) is a planned 22-mile regional natural and recreation area primarily in the river's floodplain extending from Friant Dam to State

Route 99, encompassing portions of both Fresno and Madera Counties. The *San Joaquin River Parkway Master Plan Update* (Parkway Master Plan) envisions the following elements for the Parkway: a primary multi-use trail from Friant Dam to State Route 99 (22+/- river miles); contiguous and continuous wildlife habitat and movement corridors; a regional, multifaceted parkway experience for visitors, consisting of river access, low-impact recreation, and conservation education; and functional regional conservation and restoration of habitat, the watershed, and ecosystems (San Joaquin River Conservancy 2018). On full build-out the Parkway would include a multi-use trail extending the entire length (envisioned as a 12-foot-wide surface with a separate, parallel unpaved surface for equestrian uses), an interconnected recreational trail system, habitat conservation areas and a protected wildlife movement corridor, non-motorized boating trail, low-impact recreation areas, educational and interpretive programs and features, watershed improvements, and ancillary facilities.

The multi-use trail is planned to extend along the northwest boundary of the Quarry Site, just inside the site, before crossing the San Joaquin River to the west. The multi-use trail would also extend along the northwest boundary of the Plant Site, just outside the site, and extend along the southwest boundary of the Plant Site, just inside the site. The Parkway Master Plan notes that the actual locations of the planned multi-use trail, river crossing, and other Parkway facilities would vary depending on the ability to purchase privately owned land.

The proposed project includes the location of a potential easement for a public trail for the San Joaquin River Conservancy (SJRC) at the Plant Site along the Friant Road frontage. In addition, the proposed project includes the location of a potential easement for a public trail for the SJRC at the Quarry Site along the existing 200-foot setback from the San Joaquin River. Such easements provide the potential to facilitate connection of about three (3) miles of planned trails in the San Joaquin River Parkway Master Plan.

Fresno County Regional Active Transportation Plan

The *Fresno County Regional Active Transportation Plan* (Fresno County ATP) was developed by the Fresno County Council of Governments (COG) and is a comprehensive guide outlining the vision for biking, walking, and other human-powered transportation in Fresno County (COG 2024). The Fresno County ATP envisions a complete, safe, and comfortable network of trails, sidewalks, and bikeways that serves all who live and work in the region. This plan seeks to achieve the following goals:

- create a network of safe and attractive trails, sidewalks, and bikeways that connect Fresno County residents to key destinations, especially local schools, parks, and transit;

- create a network of regional bikeways that allows bicyclists to safely ride between cities and other regional destinations;
- increase walking and bicycling trips in the region by creating user-friendly facilities; and
- increase safety by creating bicycle facilities and improving crosswalks and sidewalks for pedestrians.

The Fresno County ATP identifies the existing Bike Paths and Bike Lanes along roadways that would be used by vehicle and truck trips generated by the proposed project (described in Section 4.17.1.4, above). The ATP does not indicate any planned bicycle facilities along these roadways.

Fresno County Regional Transportation Plan

The *Regional Transportation Plan/Sustainable Communities Strategy 2018-2042* (Fresno County RTP/SCS) developed by the COG comprehensively assesses all forms of transportation available in Fresno County as well as travel and goods movement needs through 2042 (COG 2017). The Fresno County RTP/SCS contains four main required elements, and also includes additional elements or chapters regarding the regional context of the Fresno County RTP/SCS, public participation, environmental justice analysis, and transportation performance management. The four main elements are described below.

- The **Policy Element** sets forth the transportation goals, objectives and policies for each transportation mode.
- The **Sustainable Communities Strategy** integrates land use and transportation planning efforts to meet Fresno County's greenhouse gas emission reduction targets.
- The **Action Element** introduces the multimodal system by transportation mode. Each section describes the existing system, discusses recent accomplishments, provides a needs assessment, and proposes short-term and long-term actions for both planning and actual project improvements.
- The **Financial Element** identifies both existing and anticipated revenue sources as well as the financing techniques available for the region's planned transportation investments, ongoing operations and maintenance.

Guidelines for the Preparation of Traffic Impact Studies within County of Fresno

The document *Guidelines for the Preparation of Traffic Impact Studies Within County of Fresno* (Fresno County 2012) identifies acceptable LOS and queuing at intersections at County locations and within the spheres of influence of the City of Fresno and the City of Clovis.

LOS and queuing are defined and described below in the "LOS and Queuing Analysis" subsection of Section 4.17.3.2, "Analysis Methodology."

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) Transportation and Circulation Element includes the following policies that apply to the proposed project:

Transportation and Circulation Element

Section A. Streets and Highways

Goal TR-A: To plan and provide a unified, multi-modal, coordinated, and cost-efficient countywide street and highway system that ensures the safe, orderly, and efficient movement of people and goods, including travel by walking, bicycle, or transit.

Policy TR-A.3: The County shall plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county. Roadway improvements to increase capacity and maintain LOS standards should be planned and programmed based on consideration of the total overall needs of the roadway system, recognizing the priority of maintenance, rehabilitation, and operation of the existing road system.

The County may, in programming capacity-increasing projects, allow exceptions to the level of service standards in this policy where it finds that the improvements or other measures required to achieve the LOS policy are unacceptable based on established criteria. In addition to consideration of the total overall needs of the roadway system, the County shall consider the following factors:

a) The right-of-way needs and the physical impacts on surrounding properties;
b) Construction and right-of-way acquisition costs;
c) The number of hours that the roadway would operate at conditions below the standard;
d) The ability of the required improvement to significantly reduce delay and improve traffic operations; and
e) Environmental impacts upon which the County may base findings to allow an exceedance of the standards.

In no case should the County plan for worse than LOS D on rural County roadways, worse than LOS E on urban roadways within the spheres of influence of the cities of Fresno and Clovis, or in cooperation with Caltrans and the Council of Fresno County Governments, plan for worse than LOS E on State Routes in the county.

Policy TR-A.6: The County shall require dedication of right-of-way or dedication and construction of planned road facilities as a condition of land development, and require an analysis of impacts of traffic from all land development projects including impacts from truck traffic. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. The County may allow a project to fund a fair share of improvements that provide significant benefit to others through traffic impact fees.

Policy TR-A.7: The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system.

Policy TR-A.10: The County shall ensure that land development that affects roadway use or operation or requires roadway access to plan, dedicate, and construct required improvements consistent with the criteria in the Circulation Diagram and Standards section of this element.

Policy TR-A.16: The County working with the cities of Fresno County, Shall establish a system of designated truck routes through areas of urban density.

Section D. Bike Facilities

Goal TR-D: To plan and provide a safe, continuous, and easily accessible bikeway system that facilitates the use of the bicycle as a viable alternative transportation mode and as a form of recreation and exercise.

Policy TR-D.1: The County shall implement a system of recreational, commuter, and inter-community bicycle routes in accordance with the Regional Bikeway Plan described in the Circulation Diagram and Standards section and depicted in Figure TR-2 [of the Fresno County General Plan]. The plan designates bikeways between cities and unincorporated communities, to and near major traffic generators such as recreational areas, parks of regional significance, and other major public facilities, and along recreational routes.

Policy TR-D.6: The County should promote bicycle safety programs through education and awareness programs aimed at both cyclists and motorists.

4.17.3 Significance Criteria and Analysis Methodology

4.17.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to transportation if it would:

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
b) Conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
d) Result in inadequate emergency access.

4.17.3.2 Analysis Methodology

Project Trip Generation

The Traffic Impact Study (Appendix I-1) evaluates existing and project annual trip generation for the following scenarios:

- Stage 1—3.0 MT per year
- Project Stage 2—3.0 MT per year

Project trip generation was estimated based on the volume of material to be hauled and other project-specific characteristics. Table 4.17-1, "Existing Annual Trip Generation at Plant and Quarry Sites," Table 4.17-2, "Project Annual Trip Generation—Stage 1 (2.0 MT Per Year)," Table 4.17-3, "Project Annual Trip Generation—Stage 1 (3.0 MT Per Year)," and Table 4.17-4, "Project Annual Trip Generation—Stage 2 (3.0 MT Per Year)," present the various types of vehicles accessing the project sites based on existing conditions and permits. The type of material hauled, the vehicle capacity, the annual number of trips, and the average annual daily truck trips based on a 365-day average are included in the table.

Table 4.17-1
Existing Annual Trip Generation at Plant and Quarry Sites

Type of Trip	Truck Axles	Capacity	Approximate Material per Year	Annual Trips		Annual Average Daily Truck Trips[a]	
				Entering	*Exiting*	*Entering*	*Exiting*
QUARRY SITE							
Employees	0	-	-	250	250	N/A	N/A
Private Trucks for Interplant Haul[b]	5	-	-	1,500	1,500	4.1	4.1
Mobile Equipment Service	2	-	-	250	250	0.7	0.7
Water Truck	2	-	-	1,750	1,750	4.8	4.8
INTERPLANT HAUL							
Interplant Haul[c]	5	25 tons	1,406,250 tons	56,250	56,250	154.1	154.1
PLANT SITE							
Employees	0	-	-	13,463	13,463	N/A	N/A
Aggregate Sales	5	25 tons	1,061,515 tons	42,461	42,461	116.3	116.3
Ready-Mix Concrete Sales	3	9.5 cy	189,550 cy	19,953	19,953	54.7	54.7
CMB and RAP sales	5	25 tons	25,000 tons	1,000	1,000	2.7	2.7
Cement Delivery	5	27 tons	44,544 tons	1,650	1,650	4.5	4.5
Diesel Fuel Delivery	5	7,500 gal.	263,262 gal.	36	36	0.1	0.1
Outside Services / Misc.	0	-	-	500	500	N/A	N/A
Total 2-Axle	**-**	**-**	**-**	**2,000**	**2,000**	**5.5**	**5.5**
Total 3-Axle	**-**	**-**	**-**	**19,953**	**19,953**	**54.7**	**54.7**
Total 5-Axle	**-**	**-**	**-**	**102,897**	**102,897**	**281.9**	**281.9**
Total Non-Truck	**-**	**-**	**-**	**14,213**	**14,213**	**N/A**	**N/A**
GRAND TOTAL	**-**	**-**	**-**	**139,063**	**139,063**	**342.1**	**342.1**

Table Source: Table 4.1 of Appendix I-1.

Table Notes:

a. Annual trips are divided over 365 days per year.

b. Interplant haul trucks are six private drivers who arrive with empty trucks and depart with empty trucks every workday (250 per year).

c. Interplant haul loads originate at the Quarry Site and are delivered to the Plant Site. Empty trucks return to the Quarry Site.

Table 4.17-2
Project Annual Trip Generation—Stage 1 (2.0 MT Per Year)

Type of Trip	Truck Axles	Capacity	Approximate Materialper Year	Annual Trips		Annual Average Daily Truck Trips[a]	
				Entering	*Exiting*	*Entering*	*Exiting*
QUARRY SITE							
Employees	0	-	-	3,000	3,000	N/A	N/A
Private Trucks for Interplant Haul[b]	5	-	-	1,000	1,000	2.7	2.7
Aggregate Sales	5	25 tons	1,308,000 tons	52,320	52,320	143.3	143.3
Specialty Rock Import	5	25 tons	50,000 tons	2,000	2,000	5.5	5.5
Diesel Fuel Delivery	5	7,500 gal.	75,000 gal.	10	10	0.0	0.0
Outside Services / Misc.	0	-	-	500	500	N/A	N/A
INTERPLANT HAUL							
Interplant Haul[c]	5	25 tons	417,000 tons	16,680	16,680	45.7	45.7
PLANT SITE							
Employees	0	-	-	11,301	11,301	N/A	N/A
Aggregate Sales	5	25 tons	275,000 tons	11,000	11,000	30.1	30.1
Hot-Mix Asphalt Sales	5	25 tons	300,000 tons	12,000	12,000	32.9	32.9
Ready-Mix Concrete Sales	3	9.5 cy	200,000 cy	21,053	21,053	57.7	57.7
CMB and RAP sales	5	25 tons	100,000 tons	4,000	4,000	11.0	11.0
Liquid Asphalt Delivery	5	27 tons	15,000 tons	556	556	1.5	1.5
Cement Delivery	5	27 tons	47,000 tons	1,741	1,741	4.8	4.8
Concrete/Asphalt Delivery	5	25 tons	100,000 tons	4,000	4,000	11.0	11.0
Diesel Fuel Delivery	5	7,500 gal.	370,000 gal.	50	50	0.1	0.1
Propane for Asphalt Plant	5	12,165 gal.	825,000 gal.	68	68	0.2	0.2
Outside Services / Misc.	0	-	-	500	500	N/A	N/A
Total 2-Axle	**-**	**-**	**-**	**0**	**0**	**0.0**	**0.0**
Total 3-Axle	**-**	**-**	**-**	**21,053**	**21,053**	**57.7**	**57.7**
Total 5-Axle	**-**	**-**	**-**	**105,425**	**105,425**	**288.8**	**288.8**
Total Non-Truck	**-**	**-**	**-**	**15,301**	**15,301**	**N/A**	**N/A**
GRAND TOTAL	**-**	**-**	**-**	**141,779**	**141,779**	**346.5**	**346.5**

Table Source: Table 4.2 of Appendix I-1.
Table Notes:
a. Annual trips are divided over 365 days per year.
b. Interplant haul trucks are six private drivers who arrive with empty trucks and depart with empty trucks every workday (250 per year).
c. Interplant haul loads originate at the Quarry Site and are delivered to the Plant Site. Empty trucks return to the Quarry Site.

Table 4.17-3
Project Annual Trip Generation—Stage 1 (3.0 MT Per Year)

Type of Trip	Truck Axles	Capacity	Approximate Materialper Year	Annual Trips		Annual Average Daily Truck Trips[a]	
				Entering	*Exiting*	*Entering*	*Exiting*
QUARRY SITE							
Employees	0	-	-	3,000	3,000	N/A	N/A
Private Trucks for Interplant Haul[b]	5	-	-	1,000	1,000	2.7	2.7
Aggregate Sales	5	25 tons	2,052,000 tons	82,080	82,080	224.9	224.9
Specialty Rock Import	5	25 tons	100,000 tons	4,000	4,000	11.0	11.0
Diesel Fuel Delivery	5	7,500 gal.	100,000 gal.	14	14	0.0	0.0
Outside Services / Misc.	0	-	-	500	500	N/A	N/A
INTERPLANT HAUL							
Interplant Haul[c]	5	25 tons	673,000 tons	26,920	26,920	73.8	73.8
PLANT SITE							
Employees	0	-	-	12,126	12,126	N/A	N/A
Aggregate Sales	5	25 tons	275,000 tons	11,000	11,000	30.1	30.1
Hot-Mix Asphalt Sales	5	25 tons	500,000 tons	20,000	20,000	54.8	54.8
Ready-Mix Concrete Sales	3	9.5 cy	300,000 cy	31,579	31,579	86.5	86.5
CMB and RAP sales	5	25 tons	200,000 tons	8,000	8,000	21.9	21.9
Liquid Asphalt Delivery	5	27 tons	25,000 tons	926	926	2.5	2.5
Cement Delivery	5	27 tons	70,500 tons	2,612	2,612	7.2	7.2
Concrete/Asphalt Delivery	5	25 tons	200,000 tons	8,000	8,000	21.9	21.9
Diesel Fuel Delivery	5	7,500 gal.	500,000 gal.	67	67	0.2	0.2
Propane for Asphalt Plant	5	12,165 gal.	1,375,000 gal.	114	114	0.3	0.3
Outside Services / Misc.	0	-	-	500	500	N/A	N/A
Total 2-Axle	**-**	**-**	**-**	**0**	**0**	**0.0**	**0.0**
Total 3-Axle	**-**	**-**	**-**	**31,579**	**31,579**	**86.5**	**86.5**
Total 5-Axle	**-**	**-**	**-**	**164,733**	**164,733**	**451.3**	**451.3**
Total Non-Truck	**-**	**-**	**-**	**16,126**	**16,126**	**N/A**	**N/A**
GRAND TOTAL	**-**	**-**	**-**	**212,438**	**212,438**	**537.8**	**537.8**

Table Source: Table 4.3 of Appendix I-1.
Table Notes:
a. Annual trips are divided over 365 days per year.
b. Interplant haul trucks are six private drivers who arrive with empty trucks and depart with empty trucks every workday (250 per year).
c. Interplant haul loads originate at the Quarry Site and are delivered to the Plant Site. Empty trucks return to the Quarry Site.

Table 4.17-4
Project Annual Trip Generation—Stage 2 (3.0 MT Per Year)

Type of Trip	Truck Axles	Capacity	Approximate Material per Year	Annual Trips		Annual Average Daily Truck Trips[a]	
				Entering	*Exiting*	*Entering*	*Exiting*
QUARRY SITE							
Employees	0	-	-	15,126	15,126	N/A	N/A
Aggregate Sales	5	25 tons	2,228,000 tons	89,120	89,120	244.2	244.2
Hot-Mix Asphalt Sales	5	25 tons	500,000 tons	20,000	20,000	54.8	54.8
Ready-Mix Concrete Sales	3	9.5 cy	300,000 tons	31,579	31,579	86.5	86.5
CMB and RAP	5	25 tons	200,000 tons	8,000	8,000	21.9	21.9
Liquid Asphalt Delivery	5	27 tons	25,000 tons	926	926	2.5	2.5
Cement Delivery	5	27 tons	70,500 tons	2,612	2,612	7.2	7.2
Sand Import	5	25 tons	196,020 tons	7,841	7,841	21.5	21.5
Specialty Rock Import	5	25 tons	100,000 tons	4,000	4,000	11.0	11.0
Concrete/Asphalt Delivery	5	25 tons	200,000 tons	8,000	8,000	21.9	21.9
Diesel Fuel Delivery	5	7,500 gal.	600,000 gal.	80	80	0.2	0.2
Propane for Asphalt Plant	5	12,165 gal.	1,375,000 gal.	114	114	0.3	0.3
Outside Services / Misc.	0	-	-	500	500	N/A	N/A
Total 2-Axle	**-**	**-**	**-**	**0**	**0**	**0.0**	**0.0**
Total 3-Axle	**-**	**-**	**-**	**31,579**	**31,579**	**86.5**	**86.5**
Total 5-Axle	**-**	**-**	**-**	**140,693**	**140,693**	**385.5**	**385.5**
Total Non-Truck	**-**	**-**	**-**	**15,626**	**15,626**	**N/A**	**N/A**
GRAND TOTAL	**-**	**-**	**-**	**187,898**	**187,898**	**472.0**	**472.0**

Table Source: Table 4.4 of Appendix I-1.
Table Notes:
a. Annual trips divided over 365 days per year.

Vehicle Miles Traveled Analysis

As discussed previously in this EIR, the CEQA Guidelines were amended in December 2018 as a result of amendments to the CEQA statute pursuant to SB 743. CEQA Guidelines Section 15064.3 describes specific considerations for evaluating a project's transportation impacts and advises that vehicle miles traveled (VMT) is generally the most appropriate measure of transportation impacts CEQA Guidelines Section 15064.3(a), defines VMT as "…the amount and distance of automobile travel attributable to a project."

As of the date of this analysis, the County has not finalized any VMT guidelines. In addition, the guidelines that were prepared by COG (COG 2021) for the County's

consideration have not been approved by the County. As a result, the VMT analysis presented in this analysis was performed pursuant to the Technical Advisory (OPR 2018).

The Technical Advisory (OPR 2018) provides VMT thresholds for residential, office, and retail projects, which tend to have the greatest influence on VMT, but does not provide thresholds for other land use types, including aggregate mining and production facilities. As indicated above, CEQA Guidelines Section 15064.3 (a) indicates that the analysis of VMT is concerned with the amount and distance of automobile travel. The Technical Advisory indicates that the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks (OPR 2018). Goods movement (i.e., the transport of goods by truck) is therefore not required to be considered under SB 743.

Automobile VMT Significance Thresholds

The Technical Advisory states that projects that generate or attract fewer than 110 automobile trips per day can be assumed to cause a less-than-significant transportation impact (OPR 2018). Therefore, the 110 automobile trips per day threshold is used to determine whether the increase in automobile trips generated by the proposed project could result in a significant increase in VMT.

Total Project VMT Analysis

A VMT analysis that includes both automobile and truck trip miles travelled as part of the movement of goods was completed as part of the VMT Addendum (Appendix I-2). The analysis is presented below for informational purposes only and does not apply to the determination of CEQA impacts.

There are no well-established methods or sets of empirical data for estimating VMT, particularly for aggregate mining operations that are highly dependent upon the location of the source, the locations of other aggregate mines, regional demand, and the consideration that not all trips are round trips. The trip generation estimates presented in the Traffic Impact Study (Appendix I-1) were utilized as the basis for the VMT estimates developed by the VMT Addendum (Appendix I-2). Calculations were performed to estimate the distribution of trips to the various cities and growth areas in the region considering the relative populations and distances from the source. For purposes of these estimates, truck trips and automobile trips were considered separately, and each trip was considered to be a round trip with an equal trip length in each direction. In addition to the proposed Rockfield Quarry operations, the aggregate mines listed in Table 4.17-5, "Active, Inactive, and Permitted Aggregate Mines in the Fresno-Madera Production Consumption Region," were considered in the VMT analysis. These locations are shown on Figure 4.17-2, "Active, Inactive, and Permitted Aggregate Mines in the Fresno-Madera Production Consumption Region."

Table 4.17-5
Active, Inactive, and Permitted Aggregate Mines in the Fresno-Madera Production Consumption Region

Aggregate Mine	Operational Status
Sanger Sand & Gravel—Vulcan	Active
Kings River Sand & Gravel—Calaveras	Active
Madera Quarry	Inactive
Carmelita Resources	Permitted, not operational
Riverbend Sand & Gravel	Permitted, not operational
Austin Quarry	Active

Table Source: Page 2 of Appendix I-2.
Table Notes: Aggregate mine locations are shown on Figure 4.17-2. The operational status is based on conditions that were existing at the time the Traffic Impact Study (Appendix I-2) was completed.

VMT estimates for project-generated truck and automobile trips assuming that all other aggregate mines in the region are operating are presented in Table 4.17-6, "Project Annual VMT Estimates—All Regional Aggregate Sources Operating." VMT estimates for project-generated trips assuming that only currently-active aggregate sources are operating are presented in Table 4.17-7, "Project Annual VMT Estimates—Only Currently Active Regional Aggregate Sources Operating."

Table 4.17-6
Project Annual VMT Estimates—All Regional Aggregate Sources Operating

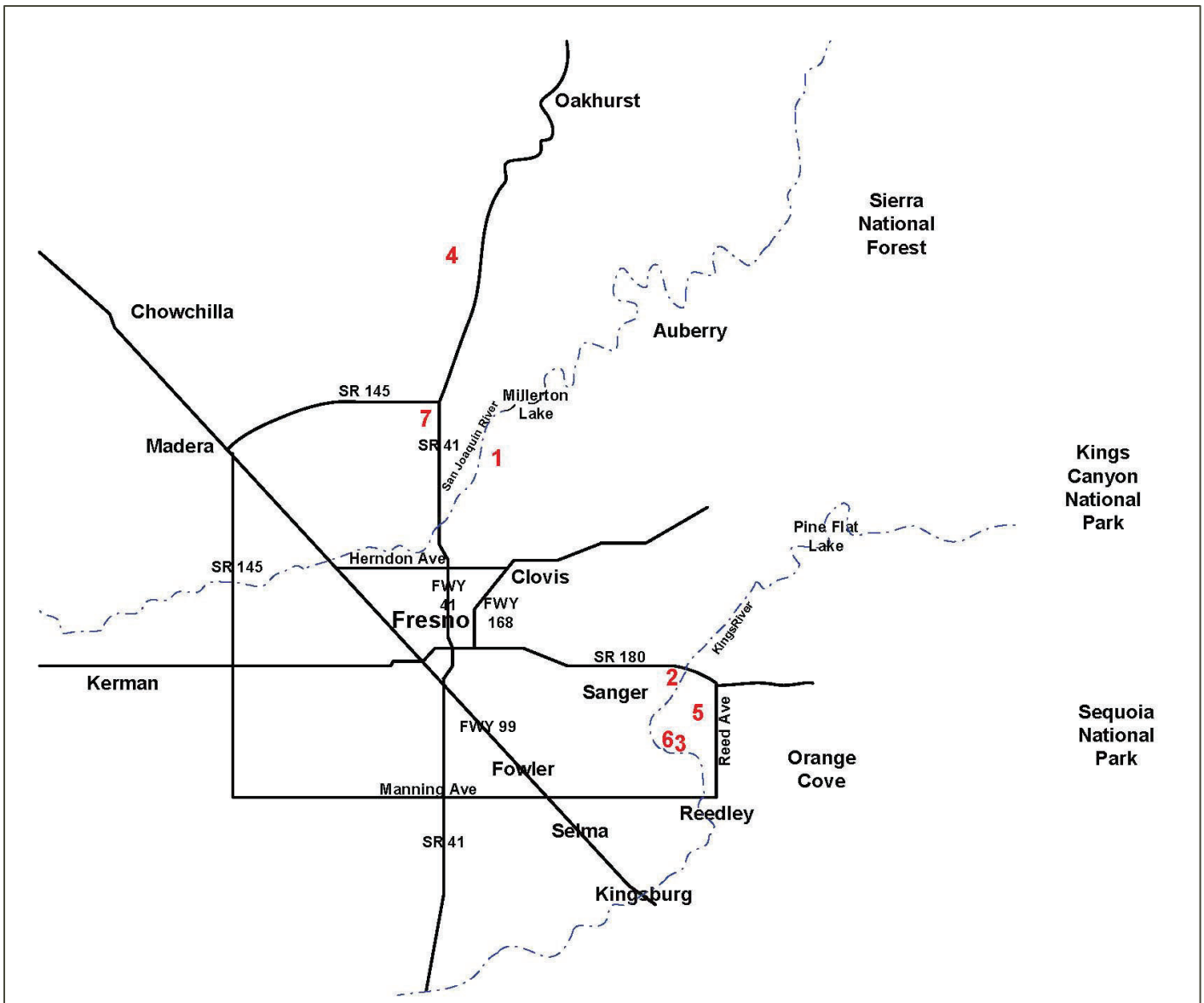
Project Stage	Annual VMT		
	Trucks	*Automobiles*	*Total*
Existing	2,678,729	474,720	3,153,449
Stage 1—2.0 MTY	3,994,045	511,060	4,505,105
Stage 1—3.0 MTY	6,166,601	538,616	6,705,217
Stage 2 —3.0 MTY	6,161,935	521,915	6,683,850

Table Source: Table 1 of Appendix I-2.
Table Notes: MTY = million tons per year; VMT = vehicle miles travelled.

Table 4.17-7
Project Annual VMT Estimates—Only Currently Active Regional Aggregate Sources Operating

Project Stage	Annual VMT		
	Trucks	*Automobiles*	*Total*
Existing	2,791,148	474,720	3,265,868
Stage 1 —2.0 MTY	4,173,978	511,060	4,685,038
Stage 1—3.0 MTY	6,444,195	538,616	6,982,811
Stage 2—3.0 MTY	6,444,248	521,915	6,966,163

Table Source: Table 2 of Appendix I-2.
Table Notes: MTY = million tons per year; VMT = vehicle miles travelled.



Active Aggregate Mines

1. Rockfield - Cemex
2. Sanger Sand and Gravel - Vulcan Materials Company
3. Kings River Sand and Gravel - Calaveras Materials, Inc.

Inactive Mines

4. Madera Quarry

Permitted Aggregate Mines - Not Operational

5. Carmelita Resources
6. Riverbend Sand and Gravel
7. Austin Quarry - Vulcan Materials Company

SOURCE: Peter Engineering Group 2020; arranged by Benchmark Resources in 2022

Active, Inactive, and Permitted Aggregate Mines in the Fresno-Madera Production Consumption Region

ROCKFIELD MODIFICATION PROJECT

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Figure 4.17-2

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The number of sources available in a region is not expected to affect the demand for the aggregate. Consequently, the more sources of aggregate that are available, the shorter the average length per trip that would occur in the region. Therefore, to provide a clear representation of the VMT impacts of the proposed project on regional VMT, additional analyses were performed to provide an estimate of the difference in VMT if the project were not approved resulting in the Rockfield Quarry becoming inactive. The project truck trip estimates in the Traffic Impact Study would be redistributed to other sources; it was assumed that no additional employee or automobile trips would be required at the other sources.

The VMT of the project truck trips distributed to other aggregate mines are presented in Table 4.17-8, "No-Project Annual VMT Estimates—All Regional Aggregate Sources Operating," and Table 4.17-9, "No-Project Annual VMT Estimates—Only Currently-Active Regional Aggregate Sources Operating."

Table 4.17-8
No-Project Annual VMT Estimates—All Regional Aggregate Sources Operating

Project Stage	Annual VMT		
	Project VMT	*Project Trucks Redistributedto Other Sources*	*Total Regional Increase with No Project*
Existing	3,153,449	3,693,491	540,042
Stage 1—2.0 MTY	4,505,105	5,376,919	871,814
Stage 1—3.0 MTY	6,705,217	8,057,696	1,352,479
Stage 2—3.0 MTY	6,683,850	8,060,099	1,376,248

Table Source: Table 3 of Appendix I-2.
Table Notes: MTY = million tons per year; VMT = vehicle miles travelled.

Table 4.17-9
No-Project Annual VMT Estimates—Only Currently-Active Regional Aggregate Sources Operating

Project Stage	Annual VMT		
	Project VMT	*Project Trucks Redistributedto Other Sources*	*Total Regional Increase with No Project*
Existing	3,265,868	3,937,748	671,879
Stage 1—2.0 MTY	4,685,038	5,767,865	1,082,827
Stage 1—3.0 MTY	6,982,811	8,660,832	1,678,022
Stage 2—3.0 MTY	6,966,163	8,673,489	1,707,326

Table Source: Table 4 of Appendix I-2.
Table Notes: MTY = million tons per year; VMT = vehicle miles travelled.

The VMT analysis results presented in Tables 4.17-6, -7, -8 and -9 indicate that, although the proposed project appears to generate a high number of VMT, the actual effect of the project on a regional basis is to reduce VMT as compared to the condition in which the project does not exist. This is because demand for aggregate for construction projects within the region will exist with or without the project. Without the availability of aggregate from the project, aggregate for regional construction projects would need to be transported from other aggregate production operations. Similarly, the project would not create or increase the demand for processing concrete and asphalt for recycling. These needs will exist with or without the project. Thus, with or without the project, construction aggregate, recycled material, and fill material would be hauled throughout the region resulting in increased regional aggregate haul truck VMT, i.e., hauled from further locations for certain projects.

LOS and Queuing Analysis

Although automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA (CEQA Section 21099(b)(2)), the *Fresno County General Plan* (Fresno County 2024) and *Guidelines for the Preparation of Traffic Impact Studies Within County of Fresno* (Fresno County 2012) retain policies that require evaluation of congestion and LOS and queuing. Consistent with these policies, an evaluation of predicted changes in LOS queuing resulting from project-related vehicle trips on public roads in the project vicinity was prepared and is presented in the Traffic Impact Study included as Appendix I-1 of this Draft EIR.

LOS is an indicator of operating conditions on a roadway or at an intersection and is defined in categories ranging from LOS A to LOS F, with LOS A representing the best traffic flow conditions and LOS F representing poor conditions. LOS A indicates free-flowing traffic and LOS F indicates substantial congestion with stop-and-go traffic and long delays at intersections (Caltrans 2020). LOS A would appear to be a good grade to achieve, but it is actually a result of overbuilding the system, resulting in wasted money, resources, land, and increased impacts from the facility, such as encroaching closer than necessary to existing houses or removing of houses unnecessarily. However, LOS F is not always good either, resulting in increased commute times, more idling cars resulting in increased emissions, and driver frustration.

Queue lengths are reported for turn lanes at signalized intersections to reveal possible deficiencies that would not be apparent based only on LOS results. For example, if a left-turn lane is not long enough to contain the queues, then the vehicles waiting to turn left will back up into the through traffic lanes and potentially block through traffic while the through traffic signal phase is being served with green light time. This type of deficiency

would not be apparent based on LOS calculations alone for signalized intersections. On the other hand, at stop-sign-controlled intersections a queuing analysis would not reveal any additional deficiencies that are not already revealed in the LOS analysis. Therefore, queuing analyses are not presented for stop-sign-controlled intersections.

Based on the estimated trip generation information, the Traffic Impact Study evaluates existing and project LOS and queuing at 15 intersections (shown on Figure 4.17-1) for the following scenarios:

- Existing Conditions;
- Existing-Plus-Project Conditions (Stage 1—3.0 MT per year);
- Five-Year Cumulative Conditions with Project (Stage 1—2.0 MT per year);
- 15-Year Cumulative Conditions with Project (Stage 1—3.0 MT per year);
- Cumulative (Year 2040) No-Project Conditions; and
- Cumulative (Year 2040) Conditions with Project (Stage 1—3.0 MT per year).

It should be noted that Stage 2 of the proposed project would not occur prior to the year 2050 (up to 30 years after approval of the proposed project), which is beyond the typical design life and horizon years of the General Plans of the affected agencies. Furthermore, Stage 2 does not represent the worst-case project trip generation scenario. Therefore, the Traffic Impact Study did not conduct an analysis of LOS, queuing, and traffic index for Stage 2 of the proposed project.

That Traffic Impact Study indicates that all of the study intersections are currently operating at acceptable LOS; therefore, no LOS deficiencies are identified. Queues in some turn lanes exceed the existing storage capacity at some intersections. The analysis in the Traffic Impact Study found that the addition of project-related trips to existing conditions, 5-year cumulative conditions, 15-year, and cumulative (year 2040) conditions would contribute to substantial decreases in LOS and substantial increase in queuing at some intersections. The substantial change in LOS and queuing is based on the thresholds in the *Guidelines for the Preparation of Traffic Impact Studies Within County of Fresno* (Fresno County 2012). Measures to reduce these traffic congestion effects are recommended in the Traffic Impact Study, are identified under Impact 4.17-1, and are required as Mitigation Measure 4.17-1a through 4.17-1r. These measures primarily consist of the payment of equitable share of costs of future roadway improvements in the County, and, if warranted, the installation of traffic signals at the intersection of North Friant Road with the Quarry Site and Plant Site entrances. The study analysis indicates that LOS and queuing would be effectively reduced through the implementation of the recommended measures.

The County of Fresno typically uses the following equation to determine a project's equitable share of the cost of improvements:

$$P = \frac{T}{T_B}$$

where:

P = The equitable share of the Project's traffic impact;

T = The Project trips generated during the peak hour of the adjacent facility; and

TB = The forecasted (future with Project) traffic volume on the impacted facility.

Detailed information regarding methods, assumptions, analysis results, and mitigation are provided in the Traffic Impact Study included as Appendix I-1 of this Draft EIR.

Traffic Index Analysis

The traffic index is a measure of the number of 18,000-pound equivalent single axle loads expected over the design period and is used to calculate the required pavement thickness of a roadway. A design life of 20 years is typically utilized. An increase in the traffic index as a result of a project's traffic or regional growth creates a corresponding decrease in the expected life of the existing pavement. The actual decrease in the life of the pavement for a given increase in traffic index is dependent upon variable factors such as existing asphalt concrete thickness, aggregate base thickness, and strength of the subgrade soils.

The County has established criteria for the purpose of determining if a project would substantially increase the traffic index. If truck traffic generated by a project results in the traffic index increasing by a factor of 0.5, the project is required to implement measures to improve the pavement sections and accommodate the increase in truck traffic.

The Traffic Impact Study (Appendix I-1) conducted a traffic index analysis of the following roadway segments:

1) Friant Road between North Fork Road and the Quarry Site;
2) Friant Road between the Quarry Site and the Plant Site;
3) Friant Road between the Plant Site and Willow Avenue;
4) Friant Road between Willow Avenue and Copper River Drive; and
5) Willow Avenue between Friant Road and Copper Avenue.

The results of the existing conditions traffic index analyses are summarized in Table 4.17-10, "Traffic Index Summary—Existing and Existing Plus Project."

Table 4.17-10
Traffic Index Summary—Existing and Existing Plus Project

Road	Segment	Direction	Existing Traffic Index	Traffic Index With Project
Friant Road	Between North Fork Road and Site Access	NB	9.5	**10.0**
		SB	9.5	**10.0**
Friant Road	Between Quarry Site and Existing Plant Access	NB	9.5	**10.0**
		SB	9.5	**10.0**
Friant Road	Between Existing Plant Access and Willow Avenue	NB	9.5	**10.5**
		SB	9.5	**10.5**
Friant Road	Between Willow Avenue and Copper River Drive	NB	9.5	**10.5**
		SB	9.5	**10.5**
Willow Avenue	Between Friant Road and Copper Avenue	NB	8.5	**9.0**
		SB	8.5	**9.0**

The proposed project would cause the traffic index to increase substantially on all of the roadway segments evaluated. Therefore, the Traffic Impact Study (Appendix I-1) recommends that the operator of the Rockfield Quarry must contribute an equitable share of pavement improvements to increase the pavement section and accommodate the traffic index values in Table 4.17-10.

4.17.4 Project Impacts and Mitigation Measures

Impact 4.17-1: Conflict with a Program, Plan, Ordinance, or Policy Addressing the Circulation System, Including Transit, Roadway, Bicycle and Pedestrian Facilities

The proposed project could conflict with a program, plan, ordinance, or policy addressing the circulation system if it would make changes to existing roadways, transit, bicycle, or pedestrian facilities, or if it would interfere with the development of planned new facilities.

The existing annual average daily trip generation at the Plant Site and Quarry Site are summarized in Table 4.17-11, "Estimated Annual Average Daily Trip Generation at Plant Site and Quarry Site," and are based on the values in Tables 4.17-1, -2, -3, and -4.

Table 4.17-11
Estimated Annual Average Daily Trip Generation at Plant Site and Quarry Site

Type of Trip	Existing Conditions Annual Average Daily Trips		Stage 1 (2.0 MT per year) Annual Average Daily Trips		Stage 1 (3.0 MT per year) Annual Average Daily Trips		Stage 2 (3.0 MT per year) Annual Average Daily Trips	
	Entering	*Exiting*	*Entering*	*Exiting*	*Entering*	*Exiting*	*Entering*	*Exiting*
Total Non-Truck[a]	**39**	**39**	**42**	**42**	**44**	**44**	**43**	**43**
Total Truck[a]	**342**	**342**	**347**	**347**	**538**	**538**	**472**	**472**
GRAND TOTAL[a]	381	381	388	388	582	582	515	515

Table Source: Based on the values in Tables 4.17-1, -2, -3, and -4.
Table Notes: MT = million tons
a. Based on annual trips divided over 365 days per year.

Based on Table 4.17-11, Stage 1 and Stage 2 project operations would increase total truck and non-truck vehicle round trips by between 7 and 201 trips per day. The increase in vehicles on existing roadways does not have the potential to conflict with a plan, ordinance, or policy addressing the circulation system because transportation plans, including the Fresno County General Plan, Fresno County Regional Active Transportation Plan, and Fresno County Regional Transportation Plan, account for anticipated future increases in vehicles travelling along roadways.

Furthermore, the proposed project does not propose changes to roadways or to the existing Class I Bike Paths and Class II Bike Lanes located along the traffic study area roadways.

The Fresno County Bicycle Master Plan, Madera County ATP, and Parkway Master Plan all envision new Class I Bike Paths or Class II Bike Lanes along the traffic study area roadways. These planned Bike Paths and Bike Lanes are not currently funded and/or depend on the ability to purchase privately owned land. The proposed Stage 1 and Stage 2 operations would remain located inside of the existing footprints of the Plant Site and Quarry Site, and vehicle trips generated by the proposed project would utilize existing roadways. Therefore, Stage 1 and Stage 2 operations would not preclude the development of new bicycle and pedestrian facilities in the areas and roadways surrounding the project sites. Upon completion of Stage 1 and 2 operations, the proposed project would be returned to an open space land use (shown on Figure 2-9, "Plant Site Final Reclaimed Conditions," and Figure 2-10, "Quarry Site Final Reclaimed Conditions," in Chapter 2, "Project Description," of this Draft EIR) which would not involve activities or changes in land use or site conditions that would preclude the development of new bicycle and pedestrian facilities in the areas and roadways surrounding the project sites.

As stated above, Policy TR-A.2 of the Transportation and Circulation Element requires the County to plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county. The Traffic Impact Study (Appendix I-1) identifies project impacts that would affect such LOS and proposes mitigation measures in accordance with Fresno County General Plan: Transportation and Circulation Element Policies TR-A.5 and TR-A.6 allowing a project to fund a fair share of improvements as identified in Section 4.11, of this Draft EIR. The project impacts and mitigation measures are described below.

Friant Road and Willow Avenue (Existing Plus Project)

Traffic signal warrants are not expected to be satisfied at the intersection of Friant Road and Willow Avenue based on the projected peak-hour traffic volumes. The project would cause the intersection of Friant Road and Willow Avenue to operate at LOS D during the a.m. peak hour during maximum operations.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1a: *Equitable Share Contributions—Friant Road and Willow Avenue (Existing Plus Project)*

The County of Fresno has collected equitable share contributions for future signalization of the intersection of Friant Road and Willow Avenue from other development projects. The project shall pay an equitable share of the cost of future signalization.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Pavement Conditions (Existing Plus Project)

The results of the Existing-Plus-Project road segment TI analyses performed in the Traffic Impact Study are summarized in Table 4.17-10 (Traffic Index Summary – Existing-Plus-Project Conditions (3.0 MT Per Year)). Project significant impacts are identified in bold type.

The existing TI was calculated from the classification traffic counts performed in the Traffic Impact Study. The existing TI is correlated to the number of truck axles observed (expanded to a 20-year pavement life) and the design TI is the number of truck axles the pavement is designed to withstand over 20 years. If the existing TI or the existing-plus-project TI is greater than the design TI, then the pavement is likely to fail in less than 20 years.

The County has established significance criteria for the purpose of determining if a project has an impact to the TI. If truck traffic generated by a project results in the TI increasing by 0.5 or more, the project is required to mitigate the roadway structural section to accommodate the increase in truck traffic.

The project would cause the traffic index to increase by a significant amount on the following road segments under Existing-Plus-Project Conditions (3.0 MT Per Year) as shown Table 4.17-12:

- Friant Road between North Fork Road and Copper River Drive (i.e. all segments of Friant Road as shown on Table 4.17-12); and
- Willow Avenue between Friant Road and Copper Avenue.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1b: *Equitable Share Contributions—Pavement Conditions*

The project shall contribute an equitable share of pavement improvements to increase the pavement section to accommodate the traffic index values in Table 4.17-12.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Friant Road and Willow Avenue (5-Year Cumulative)

The cumulative effect of regional development within five years, including the project, would cause the intersection of Friant Road and Willow Avenue to operate at LOS D during the a.m. peak hour. Traffic signal warrants are not expected to be satisfied at the intersection of Friant Road and Willow Avenue based on the projected peak-hour traffic volumes.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1c: *Equitable Share Contributions—Friant Road and Willow Avenue (5-Year Cumulative)*

The project shall pay an equitable share of the cost of future signalization of the Friant Road and Willow Avenue intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Copper Avenue and Willow Avenue (5-Year Cumulative)

The cumulative effect of regional development within five years, including the project, will cause the intersection of Copper Avenue and Willow Avenue to operate at LOS F during the a.m. peak hour. Previous studies, such as the EIR for Friant Ranch, have concluded that the intersection of Copper Avenue and Willow Avenue would eventually require signalization and widening. Additional lanes on Willow Avenue are included in the Measure C Tier 1 Urban project to widen Willow Avenue to six lanes between Copper Avenue and Barstow Avenue. The intersection of Copper and Willow Avenues will require widening and signalization to operate at acceptable levels of service in the five-year cumulative scenario with at least the following lane configurations:

- Eastbound: one left-turn lane, one through lane, and one right-turn lane;
- Westbound: one left-turn lane and one through lane with a shared right turn;
- Northbound: one left-turn lane, one through lane, and one right-turn lane; and
- Southbound: one left-turn lane, one through lane, and one right-turn lane.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1d: *Equitable Share Contributions—Copper Avenue and Willow Avenue (5-Year Cumulative)*

The project shall pay an equitable share of the cost of the future widening and signalization of the Copper Avenue and Willow Avenue intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

SR 41 and Road 145 (15-Year Cumulative)

The cumulative effect of regional development within 15 years, including the project, will cause the intersection of SR 41 and Road 145 to operate at LOS D during the a.m. peak hour and LOS F during the p.m. peak hour.

The intersection of SR 41 and Road 145 is a signalized intersection that will require widening to operate at acceptable levels of service in the 15-year cumulative scenario with at least the following lane configurations:

- Eastbound: two left-turn lanes, one through lane, and one right-turn lane;
- Westbound: two left-turn lanes, one through lane, and one right-turn lane;
- Northbound: one left-turn lane, two through lanes, and one right-turn lane; and

- Southbound: one left-turn lane, two through lanes, and one right-turn lane.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1e: *Equitable Share Contributions—SR 41 and Road 145 (15-Year Cumulative)*

The project shall pay an equitable share of the cost of future widening of the SR 41 and Road 145 intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Road 206 and Road 145 Intersection (15-Year Cumulative)

The cumulative effect of regional development within 15 years, including the project, will cause the intersection of Road 206 and Road 145 to operate at LOS F during the a.m. and p.m. peak hours. The intersection of Road 206 and Road 145 will require widening and signalization to operate at acceptable levels of service in the 15-year cumulative scenario with at least the following lane configurations:

- Eastbound: one through lane and one right-turn lane;
- Westbound: one left-turn lane and one through lane; and
- Northbound: one left-turn lane and one right-turn lane.

Alternatively, the intersection could be improved as a roundabout.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1f: *Equitable Share Contributions—Road 206 and Road 145 Intersection (15-Year Cumulative)*

The project shall pay an equitable share of the cost of the future widening and signalization of the Road 206 and Road 145 intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Friant Road and North Fork Road Intersection (15-Year Cumulative)

The cumulative effect of regional development within 15 years, including the project, will cause the intersection of Friant Road and North Fork Road to operate at LOS D during

the a.m. and p.m. peak hours. The intersection of Friant Road and North Fork Road is a signalized intersection that will require widening to operate at acceptable levels of service in the 15-year cumulative scenario with at least the following lane configurations:

- Eastbound: one left-turn lane, one through lane, and one right-turn lane;
- Westbound: one left-turn lane, one through lane, and one right-turn lane;
- Northbound: two left-turn lanes, one through lane, and one right-turn lane; and
- Southbound: one left-turn lane, one through lane, and one right-turn lane.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1g: *Equitable Share Contributions – Friant Road and North Fork Road Intersection (15-Year Cumulative)*

The project shall pay an equitable share of the cost of future widening the Friant Road and North Fork Road intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Friant Road and Quarry Site Access Intersection (15-Year Cumulative)

The traffic projections indicate the cumulative effect of regional development within 15 years, including the project (if it reaches sales of 3.0 MT per year), will cause the intersection of Friant Road and the Quarry Site to operate at LOS F during the a.m. peak hour.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1h: *Equitable Share Contributions—Friant Road and Quarry Site Access Intersection (15-Year Cumulative)*

Once County Annual Mine Inspections reveal the project has reached 2.65 MT per year (based on interpolation of peak-hour project traffic volumes between 2.0 and 3.0 MT per year as compared to the CMUTCD peak-hour warrant), the operator shall conduct annual traffic signal warrants analyses in accordance with the edition of the California Manual on Uniform Traffic Control Devices current at that time, or future equivalent as determined by the agency having jurisdiction over the intersection, to determine whether traffic signals are warranted at the intersection of Friant Road and the Quarry Site. Passenger Car Equivalent (PCE) volumes shall be used, queue lengths and number of vehicles in the queue should be documented, and the warrants studies should consider the exclusion of right turns as described in the CMUTCD. Traffic signals shall be installed if the traffic signal

warrants analyses indicates that signals are warranted, and if approved by the agency having jurisdiction over the intersection. The project will be responsible for installing the traffic signals.

Level of Significance After Mitigation: Less than significant.

Friant Road and Plant Site Access Intersection (15-Year Cumulative)

The traffic projections indicate the cumulative effect of regional development within 15 years, including the project (if it reaches sales of 3.0 MT per year), will cause the intersection of Friant Road and the Plant Site to operate at LOS F during the a.m. peak hour and LOS D during the p.m. peak hour.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1i: *Equitable Share Contributions—Friant Road and Plant Site Access Intersection (15-Year Cumulative)*

Once County Annual Mine Inspections reveal the project has reached 2.65 MT per year (based on interpolation of peak-hour project traffic volumes between 2.0 and 3.0 MT per year as compared to the CMUTCD peak-hour warrant), the operator shall conduct annual traffic signal warrants analyses in accordance with the edition of the California Manual on Uniform Traffic Control Devices current at that time, or future equivalent as determined by the agency having jurisdiction over the intersection, to determine whether traffic signals are warranted at the intersection of Friant Road and the Plant Site. Passenger Car Equivalent (PCE) volumes shall be used, queue lengths and number of vehicles in the queue should be documented, and the warrants studies should consider the exclusion of right turns as described in the CMUTCD. Traffic signals shall be installed if the traffic signal warrants analyses indicates that signals are warranted, and if approved by the agency having jurisdiction over the intersection. The project will be responsible for installing the traffic signals. The analyses shall take into consideration the future elimination of the Plant Site.

Level of Significance After Mitigation: Less than significant.

Friant Road and Willow Avenue (15-Year Cumulative)

The cumulative effect of regional development within 15 years, including the project, will cause the intersection of Friant Road and Willow Avenue to operate at LOS F during the a.m. and p.m. peak hours.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1j: *Equitable Share Contributions—Friant Road and Willow Avenue (15-Year Cumulative)*

The intersection of Friant Road and Willow Avenue will require signalization to operate at acceptable levels of service in the 15-year cumulative scenario. The project shall pay an equitable share of the cost of future signalization.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Copper Avenue and Willow Avenue (15-Year Cumulative)

The cumulative effect of regional development within 15 years, including the project, will cause the intersection of Copper Avenue and Willow Avenue to operate at LOS F during the a.m. and p.m. peak hours. The intersection of Copper Avenue and Willow Avenue will require widening and signalization to operate at acceptable levels of service in the 2040 cumulative scenario with at least the following lane configurations:

- Eastbound: one left-turn lane, two through lanes, and one right-turn lane;
- Westbound: one left-turn lane, two through lanes, and one right-turn lane;
- Northbound: one left-turn lane, two through lanes, and one right-turn lane; and
- Southbound: one left-turn lane, two through lanes, and one right-turn lane.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1k: *Equitable Share Contributions—Copper Avenue and Willow Avenue (15-Year Cumulative)*

The project shall pay an equitable share of the cost of the future widening and signalization of the Copper Avenue and Willow Avenue intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

SR 41 and Road 145 (Year 2040 Cumulative)

The cumulative effect of regional development by the year 2040, including the project, will cause the intersection of SR 41 and Road 145 to operate at LOS F during the a.m. and p.m. peak hours. The intersection of SR 41 and Road 145 is a signalized intersection that will require widening to operate at acceptable levels of service in the 2040 cumulative scenario with at least the following lane configurations:

- Eastbound: two left-turn lanes, two through lanes, and one right-turn lane;
- Westbound: three left-turn lanes, two through lanes, and one right-turn lane;
- Northbound: two left-turn lanes, two through lanes, and two right-turn lanes; and
- Southbound: two left-turn lanes, two through lanes, and one right-turn lane.

It is anticipated that the intersection will eventually require an upgrade to an interchange.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1l: *Equitable Share Contributions—SR 41 and Road 145 (Year 2040 Cumulative)*

The project shall pay an equitable share of the cost of future widening of the SR 41 and Road 145 intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Road 206 and Road 145 (Year 2040 Cumulative)

The cumulative effect of regional development by the year 2040, including the project, will cause the intersection of Road 206 and Road 145 to operate at LOS F during the a.m. and p.m. peak hours. The intersection of Road 206 and Road 145 will require widening and signalization to operate at acceptable levels of service in the 2040 cumulative scenario with at least the following lane configurations:

- Eastbound: one through lane and one right-turn lane;
- Westbound: one left-turn lane and one through lane; and
- Northbound: two left-turn lanes and one right-turn lane.

Alternatively, the intersection could be improved as a roundabout.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1m: *Equitable Share Contributions—Road 206 and Road 145 (Year 2040 Cumulative)*

The project shall pay an equitable share of the cost of the future widening and signalization of the Road 206 and Road 145 intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Friant Road and North Fork Road Intersect (Year 2040 Cumulative)

The cumulative effect of regional development by the year 2040, including the project, will cause the intersection of Friant Road and North Fork Road to operate at LOS F during the a.m. and p.m. peak hours. The intersection of Friant Road and North Fork Road is a signalized intersection that will require widening to operate at acceptable levels of service in the 2040 cumulative scenario with at least the following lane configurations:

- Eastbound: two left-turn lanes, one through lane, and one right-turn lane;
- Westbound: one left-turn lane, one through lane, and one right-turn lane;
- Northbound: two left-turn lanes, two through lanes, and one right-turn lane; and
- Southbound: one left-turn lane, two through lanes, and one right-turn lane.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1n: *Equitable Share Contributions—Friant Road and North Fork Road Intersect (Year 2040 Cumulative)*

The project shall pay an equitable share of the cost of future widening of the Friant Road and North Fork Road intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Friant Road and Quarry Site (Year 2040 Cumulative)

The traffic projections indicate the cumulative effect of regional development by the year 2040, including the project (if it reaches sales of 3.0 MT per year), will cause the intersection of Friant Road and the Quarry Site to operate at LOS F during the a.m. peak hour.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1o: *Equitable Share Contributions—Friant Road and Quarry Site (Year 2040 Cumulative)*

Once County Annual Mine Inspections reveal the project has reached 2.65 MT per year (based on interpolation of peak-hour project traffic volumes between 2.0 and 3.0 MT per

year as compared to the CMUTCD peak-hour warrant), the operator shall conduct annual traffic signal warrants analyses in accordance with the edition of the California Manual on Uniform Traffic Control Devices current at that time, or future equivalent as determined by the agency having jurisdiction over the intersection, to determine whether traffic signals are warranted at the intersection of Friant Road and the Quarry Site. Passenger Car Equivalent (PCE) volumes shall be used, queue lengths and number of vehicles in the queue should be documented, and the warrants studies should consider the exclusion of right turns as described in the CMUTCD. Traffic signals shall be installed if the traffic signal warrants analyses indicates that signals are warranted, and if approved by the agency having jurisdiction over the intersection. The project will be responsible for installing the traffic signals.

Level of Significance After Mitigation: Less than significant.

Friant Road and Plant Site (Year 2040 Cumulative)

The traffic projections indicate the cumulative effect of regional development by the year 2040, including the project (if it reaches sales of 3.0 MT per year), will cause the intersection of Friant Road and the Plant Site to operate at LOS F during the a.m. peak hour and LOS D during the p.m. peak hour.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1p: *Equitable Share Contributions—Friant Road and Plant Site (Year 2040 Cumulative)*

Once County Annual Mine Inspections reveal the project has reached 2.65 MT per year (based on interpolation of peak-hour project traffic volumes between 2.0 and 3.0 MT per year as compared to the CMUTCD peak-hour warrant), the operator shall conduct annual traffic signal warrants analyses in accordance with the edition of the California Manual on Uniform Traffic Control Devices current at that time, or future equivalent as determined by the agency having jurisdiction over the intersection, to determine whether traffic signals are warranted at the intersection of Friant Road and the Plant Site. Passenger Car Equivalent (PCE) volumes shall be used, queue lengths and number of vehicles in the queue should be documented, and the warrants studies should consider the exclusion of right turns as described in the CMUTCD. Traffic signals shall be installed if the traffic signal warrants analyses indicates that signals are warranted, and if approved by the agency having jurisdiction over the intersection. The project will be responsible for installing the traffic signals. The analyses shall take into consideration the future elimination of the Plant Site.

Level of Significance After Mitigation: Less than significant.

Friant Road and Willow Avenue (Year 2040 Cumulative)

The cumulative effect of regional development by the year 2040, including the project, will cause the intersection of Friant Road and Willow Avenue to operate at LOS F during the a.m. and p.m. peak hours. The intersection of Friant Road and Willow Avenue will require signalization to operate at acceptable levels of service in the 2040 cumulative scenario.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1q: *Equitable Share Contributions—Friant Road and Willow Avenue (Year 2040 Cumulative)*

The project shall pay an equitable share of the cost of future signalization of the Friant Road and Willow Avenue intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Copper Avenue and Willow Avenue (Year 2040 Cumulative)

The cumulative effect of regional development by the year 2040, including the project, will cause the intersection of Copper Avenue and Willow Avenue to operate at LOS F during the a.m. and p.m. peak hours. The intersection of Copper Avenue and Willow Avenue will require widening and signalization to operate at acceptable levels of service in the 2040 cumulative scenario with at least the following lane configurations:

- Eastbound: one left-turn lane, two through lanes, and one right-turn lane;
- Westbound: one left-turn lane, two through lanes, and one right-turn lane;
- Northbound: one left-turn lane, two through lanes, and one right-turn lane; and
- Southbound: one left-turn lane, two through lanes, and one right-turn lane.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measure 4.17-1r: *Equitable Share Contributions—Copper Avenue and Willow Avenue (Year 2040 Cumulative)*

The project shall pay an equitable share of the cost of future signalization of the Copper Avenue and Willow Avenue intersection.

Level of Significance After Mitigation: This impact is considered significant and unavoidable because it is uncertain when the assumed improvements will be constructed.

Impact 4.17-2: Conflict with or Be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)

As described above in the methodology of the "Vehicle Miles Travelled Analysis" subsection of Section 4.17.3.2, above, this analysis evaluates the VMT from automobile trips generated by the operation of the proposed project. The existing and project generated automobile trips at both the Plant Site and Quarry Site are summarized in Table 4.17-12, "Automobile Trip Generation," and are based on the values in Tables 4.17-1, -2, -3, and -4, above.

Table 4.17-12
Automobile Trip Generation

Type of Trip	Existing Conditions Annual Trips	Stage 1 (2.0 MT per year) Annual Trips	Stage 1 (3.0 MT per year) Annual Trips	Stage 2 (3.0 MT per year) Annual Trips
Total Annual Automobile Trips[a]	28,426	30,602	32,252	31,252
Annual Average Daily Automobile Trips[b]	78	84	88	86

Table Source: Based on the values in Tables 4.17-1, -2, -3, and -4.

Table Notes: MT = million tons

a. Encompasses both entry and exit.
b. Annual trips divided over 365 days per year.

As shown in Table 4.17-12, the existing Rockfield Quarry generates approximately 78 automobile trips per day, and the proposed project would increase automobile trips between approximately 6 and 10 trips per day during Stage 1 and Stage 2 operations. This is less than the 110 trips per day threshold. Therefore, the potential of the proposed project to generate an increase in VMT from automobile trips that would conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.17-3: Substantially Increase Hazards Due to a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment)

As described under Impact 4.17-1, the proposed Stage 1 and Stage 2 operations would remain located inside of the existing footprints of the Plant Site and Quarry Site and vehicle trips generated by the proposed project would utilize existing roadways. No changes to existing roadways or bike lanes would occur under the proposed project. Although the proposed project would have the potential to substantially increase the traffic index of the traffic study area roadways, as discussed above under the "Traffic Index Analysis" subsection of Section 4.17.3.2, above, the operator of the Rockfield Quarry would be required to pay an equitable share of pavement improvements to the County of Fresno to improve the pavement section and accommodate the traffic index values, thereby keeping road conditions safe.

Stage 1 and Stage 2 project operations would increase average vehicle trips (both non-trucks and trucks) to and from the Rockfield Quarry by between 5 and 201 trips per day.

Table 4.17-11 indicates Stage 1 and Stage 2 project operations would increase annual average daily automobile trips to and from the Rockfield Quarry by 6 to 8 trips per day. This is below the VMT significance threshold of 110 automobile trips per day pursuant to the Technical Advisory (OPR 2018), as previously described.

However, the same types of vehicles (heavy-duty haul trucks and worker passenger vehicles) would continue to access the site. Haul trucks and other motor vehicles associated with the proposed project are subject to the California Vehicle Code and local regulations intended to provide an appropriate degree of safety for motorists, bicyclists, and pedestrians. Furthermore, the existing site access/egress at the Plant Site and Quarry Site includes southbound acceleration lanes and northbound left-hand turn pockets for use by vehicles that facilitate safe access to the project sites, and these lanes and turn pockets would continue to be used under the proposed project.

The *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR 2018) indicates that because safety concerns result from many different factors, they are best addressed at a programmatic level (i.e., in a general plan or regional transportation plan) in cooperation with local governments, metropolitan planning organizations, and, where the state highway system is involved, the California Department of Transportation. The Fresno County ATP, Fresno County RTP/SCS, and Madera County ATP considered roadway safety as part of the process of plan development, and as discussed under Impact 4.17-1, the Stage 1 and 2 operations and the reclamation activities under the proposed project would not conflict with these plans.

The development of an aggregate processing plant on the Quarry Site, a hot-mix asphalt plant on the Plant Site, and the relocation of the Plant Site asphalt plant, concrete ready-mix plant, and portable recycling plant from the Plant Site to the Quarry Site would require the delivery of heavy construction equipment and facility components, some of which may require transport by oversize vehicles. The use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space. Construction-related oversize vehicle loads must comply with permit-related and other requirements of the California Vehicle Code and the California Streets and Highway Code. California Highway Patrol escorts may be required at the discretion of Caltrans and the County and would be detailed in respective oversize load permits.

For these reasons, the potential of the proposed project to substantially increase hazards due to a geometric design feature or incompatible uses would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.17-4: Result in Inadequate Emergency Access

The existing site access/egress at the Plant Site and Quarry Site includes southbound acceleration lanes and northbound left-hand turn pockets for use by vehicles that facilitate safe access to the project sites and can be used by emergency vehicles. The proposed project would not alter access to the site or result make changes to existing roadways. Therefore, the proposed project impact to emergency access would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

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4.18—TRIBAL CULTURAL RESOURCES

This section of the Draft EIR describes tribal cultural resources (TCRs) at the Plant Site and Quarry Site as they may exist today, presents the regulatory framework within which TCRs are evaluated, and analyzes the potential impacts to TCRs that could occur as a result of the project. Mitigation measures to protect TCRs are recommended, as appropriate, where potential impacts are determined to be significant. Elements considered in this section include the archaeological, ethnographic, and historical settings and known TCRs in the project vicinity. Cultural resources are addressed in greater detail in Section 4.5, "Cultural Resources," of this Draft EIR.

This section is primarily based on the correspondence between Fresno County and pertinent tribes related to the AB 52 tribal notification process. The setting information in this section is based on a peer review of an applicant-prepared cultural and paleontological resource inventory of the Plant Site and Quarry Site and publicly available sources. The applicant-prepared study used is:

- *Cultural and Paleontological Resource Inventory for the CEMEX Rockfield Modification project, Fresno County, California.* October 2019, revised July 2020.

This document contains confidential information and is not included as an appendix to this Draft EIR. However, the documents, with redaction of certain confidential information including site records, are on file at the Fresno County Planning Department.

The Cultural and Paleontological Resource Inventory prepared by Applied EarthWorks, Inc. (Applied Earthworks) was peer reviewed by County-retained InContext in April of 2020. InContext provided comments on the report and requested revisions. The report was revised in July 2020 and determined to be adequate in August 2020. The peer review letter reports are on file with the County.

4.18.1 Environmental Setting

The environmental and cultural setting sections are presented in Section 4.5. As described in greater detail in Section 4.5, Applied Earthworks conducted a cultural resource inventory at the Plant Site and Quarry Site to determine whether cultural resources are present. The inventory included a records search at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS), archival research with the Fresno County Historical Society, a search of the Native American Heritage Commission's (NAHC) Sacred Lands File, a desktop buried site sensitivity assessment, and an archaeological pedestrian survey of the project sites.

The environmental setting below focuses on the ethnographic setting and known tribal cultural resources at the project sites.

4.18.1.1 Ethnography

The project sites lie between 300 and 350 feet above mean sea level (msl) along the contact zone between the Sierra Nevada geomorphic province and the San Joaquin Valley, immediately adjacent to the San Joaquin River. In the project vicinity, the flat valley floor meets the western slopes of the Sierra Nevada foothills. The Sierra Nevada extends east to the crest where elevations reach more than 14,000 feet. This area has historically been occupied by Yokut Native Americans (Applied Earthworks 2020).

The ethnohistoric Yokuts included the Southern Valley, Northern Valley, Sierra Foothills, and Delta groups. At the time of first contact with the Spanish missionaries, the Yokuts collectively inhabited the San Joaquin Valley as well as the eastern foothills of the Sierra Nevada from the Calaveras River southward to the Kern River (Wallace 1978a, 1978b). Long-distance trade, intermarriage, and ceremonial reciprocity across the diverse geographical territories of the Yokuts was observed among ethnographers and anthropologists studying Yokuts language and culture patterns (Golla 2011:147).

The Yokuts language, a subgroup of the Yok-Utian, belongs to the broader Penutian family (Golla 2011:128–130). Compared to other Penutian languages found in Oregon and northern California, Yokuts shows considerable internal linguistic homogeneity, especially given the extent of its geographic distribution. Dialects differ minimally and were once mutually intelligible across the valley (Golla 2011). This relative lack of linguistic differentiation suggests that ancestors of the Yokuts entered California after the arrival and subsequent radiation of the more linguistically diverse Proto-Utian groups such as the Miwok and Costanoan (Golla 2011: 252; Moratto 1984: 554). Linguistic evidence demonstrating a less diverse flora and fauna vocabulary in comparison to Miwok and Costanoan suggests a more recent arrival of the Yokuts in California, occurring between A.D. 600 and 700 (Golla 2011: 252).

The project area was inhabited by two bands of Yokuts (Kroeber 1976: 484; Spier 1978: 471; Wallace 1978a: 462). The Kechayi band of the Foothill Yokuts inhabited lands that extended north from Friant along the San Joaquin River to Willow Creek. The Wakichi of the Northern Valley Yokuts utilized the land extending south along the San Joaquin River from Friant to around Pinedale (Golla 2011: 153). Kroeber (1976: 482) notes that the location of Wakichi territory suggests that they may have been members of the Foothill Yokuts but that linguistic differences place them within the valley division.

Subsistence practices were similar for both groups of Yokuts, who hunted, fished, and collected plant and nut resources. However, the importance of individual resources available in each territory differed. Valley groups relied on acorns along with salmon and other fish as two major food staples (Wallace 1978b: 464). The foothill groups focused more on hunting and collecting; fishing supplemented the other procured foods (Spier 1978: 472). The Foothill Yokuts hunted quail, while the valley groups sought waterfowl such as ducks and geese.

Technology also was similar among the two groups. Both utilized the bow and arrow for hunting; however, the foothill groups relied on obsidian when creating stone tools, while the Valley Yokuts used very little obsidian by comparison (Spier 1978: 473; Wallace 1978b: 465). Both groups manufactured baskets, but only the foothill group appears to have made ceramic vessels (Spier 1978: 473; Wallace 1978b: 466).

Dwellings constructed by the Valley Yokuts included small structures with woven tule roofs and large round or oval semisubterranean single-family dwellings (Wallace 1978b: 464–465). Sweathouses and ceremonial chambers also were constructed. The Foothill Yokuts made use of conical dwellings, sweathouses, and bedrock grinding stations (Spier 1978: 476).

Social and political organization of Valley Yokuts tribes is not well known. They may have had totemic moieties based on patrilineal descent similar to their Foothill Yokuts neighbors along the San Joaquin River (Wallace 1978b: 466). Settlement seems to have been organized around autonomous tribelets led by a headman. Unlike the valley people, the foothill groups had several headmen for each autonomous tribelet (Spier 1978: 482).

As with other Indian groups in California, the lifeways of the Yokuts were dramatically altered as a result of contact with Spanish explorers and missionaries, miners, ranchers, and other immigrants who entered the San Joaquin Valley after 1700. The introduction of European culture and new diseases proved devastating to the native population. Having been pushed off their land by settlers, many Yokuts ended up as impoverished agricultural workers or otherwise occupied the lower echelons of historical California society (Wallace 1978a).

Valley and Foothill Yokuts tribal groups have survived into the present time and are represented by members registered with the Big Sandy Rancheria of Western Mono Indians, Cold Springs Rancheria, Dumna Wo-Wah Tribal Government, Traditional Choinumni Tribe, Wuksache Indian Tribe/Eshom Valley Band, Kings River Choinumni Farm Tribe, Santa Rosa Rancheria Tachi Yokut Tribe, North Fork Mono Tribe, and Table Mountain Rancheria. Many of these tribes have developed language apprenticeship

programs and early childhood education centers to serve tribal members. Several Yokuts tribal groups are governed by elders' councils and operate auxiliary departments that serve local tribal populations in areas of healthcare, education, and cultural resource management.

4.18.1.2 Known Tribal Cultural Resources Within the Project Sites

Applied Earthworks conducted record searches, archival research, and intensive surveys of the Plant Site and Quarry Site, all of which are described in Section 4.5.1, "Environmental Setting," of this Draft EIR. Applied Earthworks' pedestrian survey resulted in the identification of two historic-era roads (P-10-007148 and P-10-007149) and two isolated artifacts consisting of a prehistoric bowl mortar (P-10-007115) and a historic-era tractor with an internal combustion engine and attached cotton picker (P-10-007116). These resources are described further in Section 4.5.1. In addition, environmental analysis in Section 4.5.4, "Project Impacts and Mitigation Measures," of this Draft EIR, for these resources determined that no cultural resources on the project sites were eligible for the National Register of Historic Places (NRHP) or the California Register of Historic Resources (CRHR).

However, a search of the NAHC Sacred Lands File identified one or more sacred sites at the Quarry Site and none at the Plant Site. The NAHC recommended contacting the Dumna Wo-Wah Tribal Government and provided a list of other individuals and tribes to contact for more information (Applied Earthworks 2020). Tribal consultation conducted by the County is described in Section 4.18.4, below.

4.18.2 Regulatory Setting

Relevant federal, state, and local programs and policies relating to TCRs that apply to the proposed project are discussed below.

4.18.2.1 Federal

There are no applicable federal programs or policies relating to TCRs.

4.18.2.2 State

Assembly Bill 52

Assembly Bill (AB) 52 specifies that a project that may cause a substantial adverse change in the significance of a TCR, as defined, is a project that may have a significant effect on the environment. AB 52 requires a lead agency to consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe: (1) requests in writing to the lead agency, (2) to be informed by the lead agency of proposed projects in that geographic area and the tribe

requests consultation, prior to determining whether a Negative Declaration, Mitigated Negative declaration, or EIR is required for a project pursuant to CEQA. AB 52 specifies examples of mitigation measures that may be considered to avoid or minimize impacts on TCRs.

California PRC Section 21080.3.1 requires that prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, the lead agency shall begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if:

- The California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and
- The California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation.

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to PRC Section 21080.3.1.

4.18.2.3 Local

Fresno County General Plan

The following existing Fresno County General Plan (Fresno County 2024) policies pertain to tribal cultural resources and are applicable to the proposed project:

Section J. Historical, Cultural, and Geological Resources

Goal OS-J: To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County's historically significant resources in order to promote historical awareness, community identify, and to recognize the county's valued assets that have contributed to past county events, trends, styles of architecture, and economy.

Policy OS-J.4: The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and resources. For projects requiring ground disturbance and located within a high or moderate cultural sensitivity areas, a cultural resources technical report may be warranted, including accurate archival research and site surveys conducted by qualified cultural resources practitioners. The need to prepare such studies shall be determined based on the tribal consultation process and initial outreach to local or state information centers.

Policy OS-J.5: The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the locations of archeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts

Policy OS-J.6: The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.

Policy OS-J.10: The County shall use the State Historic Building Code and existing legislation and ordinances to encourage preservation of cultural resources and their contributing environment.

4.18.3 Significance Criteria and Analysis Methodology

4.18.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to aesthetics if it would cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or;
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

4.18.3.2 Analysis Methodology

A TCR is a site, feature, place, cultural landscape, sacred place, or object that is of cultural value to a California Native American tribe that is either a) included or eligible for listing in the CRHR; or b) included in a local historic register. A TCR can also be defined as such if the resource is determined by the lead agency to be listed in the CRHR considering its significance to a California Native American tribe. Efforts to identify TCRs at the Plant Site and Quarry Site included SLF searches with the NAHC and consultation with Native American tribes through AB 52. Results of the SLF searches and consultation are described in Section 4.18.4, below.

Section 4.5.3.2, "Analysis Methodology," of this Draft EIR, describes analysis methodology for determining whether or not a cultural resource is eligible for listing in the California Register of Historical Resources. These criteria also apply to TCRs.

4.18.4 Project Impacts and Mitigation Measures

Impact 4.18-1: Substantial Adverse Change in the Significance of a Tribal Cultural Resource Listed or Eligible for Listing in the California Register of Historical Resources, or in a Local Register of Historical Resources as Defined in Public Resources Code Section 5020.1(k), or by the Lead Agency Pursuant to Criteria Set Forth in Public Resources Code Section 5024.1(c)

Project ground disturbance and other activities associated with mining, processing, and reclamation, would create the potential to adversely affect TCRs, as defined in Public Resource Code Section 21074, if present within or near the Plant Site or Quarry Site.

Plant Site

On May 3, 2019, the NAHC responded with search results of the Sacred Lands File for the Plant Site and surrounding 0.5-mile area. The search did not identify any additional sacred lands or resources that may have importance to local tribes at the Plant Site.

Quarry Site

In its July 26, 2017, response to Applied Earthworks' request for a search of the Sacred Lands File within the Quarry Site and surrounding 0.5-mile area, the NAHC stated that its search indicated the presence of sacred lands and resources in the immediate area (Applied Earthworks 2020). The NAHC recommended contacting the Dumna Wo-Wah Tribal Government and provided a list of other tribes and individuals to contact for more information about potential sites at the Quarry Site.

As discussed in Section 4.5, none of the historical resources identified on the project sites are eligible for inclusion in the NRHP or CRHR. Furthermore, there are no previously recorded archaeological resources located on either site. Finally, no TCRs were identified within the Plant Site or Quarry Site during on-site field surveys (see Section 4.5) (Applied EarthWorks 2020).

AB 52 Consultation

In accordance with PRC 21080.3.1, in 2019 after receiving and deeming complete the application for the proposed project, the Fresno County Planning Department notified by letter the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notification of projects, including the Dumna Wo-Wah Tribal Government, Table Mountain Rancheria, and Picayune Rancheria of the Chukchansi Indians. The notification letters were mailed via certified mail on December 9, 2019 (Appendix J). No tribe has requested consultation, and no response was received during the project's scoping period.

The extensive vertical disturbance exceeding 30 feet bgs by mining activities over the past 100+ years eliminates the potential for proposed project activities at the Plant Site and most of the Quarry Site to cause adverse impacts to TCRs that otherwise may have been present. However, the SLF search identified sacred lands at the Quarry Site, and proposed project activities at the 31-acres of undisturbed area of the Quarry Site may result in inadvertent discovery and adverse change in significance of TCRs in this area, which constitutes a potentially significant impact. Mitigation Measures 4.5-1, "Retain a Qualified Archaeologist," 4.5-2, "Inadvertent Discovery of Archaeological Resources," and "Mitigation Measure 4.5-3, "Inadvertent Discovery of Unmarked Burials" are provided to reduce adverse impacts to TCRs under the proposed project to a less than significant level through archaeological monitoring and reporting inadvertent discoveries by a qualified archaeologist. Therefore, impacts to the significance of TCRs under the proposed project would be less than significant with mitigation incorporated.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures: *Implement Mitigation Measures 4.5-2 and 4.5-3.*

Level of Significance After Mitigation: Less than significant.

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4.19—UTILITIES AND SERVICE SYSTEMS

This section of the Draft EIR describes the existing public utilities (water supply, wastewater conveyance and treatment, and solid waste collection and disposal) that would serve the project site and identifies anticipated demand for these facilities resulting from implementation of the proposed project. This section then describes analysis methodologies and identifies the potential environmental impacts as a result of the demand for public utilities and service systems that would be generated by the proposed project. Measures to mitigate potential impacts are recommended, as appropriate.

4.19.1 Environmental Setting

The following describes the existing water supply and wastewater infrastructure that serves the Rockfield Quarry, as well as dry utilities and solid waste collection and disposal.

4.19.1.1 Water Supply

Neither the Plant Site nor the Quarry Site use water from an outside water supplier. As described in Chapter 2, "Project Description," of this Draft EIR, operations at the Plant Site are supplied water from two on-site groundwater production wells. Approximately 36 acre-feet/year of groundwater from on-site wells is consumed by the ready-mix concrete operations (35 acre-feet/year) and for domestic use (e.g., toilets, washing hands) (1 acre-feet/year). The Plant Site also obtains aggregate wash water from the San Joaquin River. Currently, approximately 295 acre-feet/year of river water is consumed for aggregate processing.

Operations at the Quarry Site obtain water from groundwater and surface runoff from rainfall that accumulates in ponded pits created from historic and current mining. The water in the ponded pits is pumped out and used by water trucks for dust control. Existing total consumptive use is estimated to be 440 acre-feet/year.

4.19.1.2 Sewer System

There are two septic systems at the Plant Site. There are no septic systems or connections to sewer facilities at the Quarry Site.

4.19.1.3 Stormwater Drainage System

Stormwater runoff within the Plant Site and Quarry Site drain primarily towards excavated areas and is contained within each site by surrounding berms. Neither site conveys stormwater to an off-site stormwater drainage system.

4.19.1.4 Electric, Telecommunications, and Natural Gas Facilities

Plant Site

A Pacific Gas and Electric (PG&E) easement is located along the eastern edge of the Plant Site, adjacent to North Friant Road. A PG&E easement also crosses the northern portion of the Plant Site from east to west. These rights-of-way are shown on Figure 2-3, "Plant Site Existing Conditions," in Chapter 2. Electricity is provided by connections to PG&E power lines along North Friant Road.

The Ponderosa Telephone telecommunications terminal is located on the southwest corner of the entrance road and is connected to the office, scale house, ready-mix concrete plant and the ready-mix maintenance shop. There are no natural gas connections at the Plant Site.

Quarry Site

A Ponderosa Telephone Company telephone line and PG&E easement run along North Friant Road adjacent to the eastern boundary of the Quarry Site. A San Joaquin Light and Power Company easement is located in the southern half of the Quarry Site. These rights-of-way are shown on Figure 2-4, "Quarry Site Existing Conditions," in Chapter 2.

Electricity is currently only used by the water truck pump on the Quarry Site and is provided by connections to PG&E power lines located along North Friant Road. There are no telecommunications connections or natural gas connections at the Quarry Site.

4.19.1.5 Solid Waste

Solid wastes currently generated at the Plant Site include parts packaging (e.g., wood, cardboard); paper; and office waste. There are three 4-cubic yard bins that are collected by Ponderosa Solid Waste twice per week. There is currently no solid waste collected at the Quarry Site.

4.19.2 Regulatory Setting

4.19.2.1 Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976, as an amendment to the Solid Waste Disposal Act of 1965, to address the huge volumes of municipal and industrial solid waste generated nationwide. After several amendments, RCRA as it stands today governs the management of solid and hazardous waste and underground storage tanks (USTs). RCRA has been amended several times, most significantly by the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA

authorizes the EPA to regulate waste management activities. Additionally, RCRA authorizes states to develop and enforce their own waste management programs, in lieu of the federal program, if a state's waste management program is substantially equivalent to, consistent with, and no less stringent than the federal program.

4.19.2.2 State

California Integrated Waste Management Act and Related Regulations

The California Integrated Waste Management Act of 1989 (Public Resources Code section 40050 et seq.) (IWMA) requires all California cities and counties to reduce the volume of solid waste deposited in landfills by 50% by 2000, and to continue to remain at 50% or more diversion for each subsequent year. The IWMA requires each California city and county to prepare, adopt, and submit to the California Department of Resources Recycling and Recovery (CalRecycle) a Source Reduction and Recycling Element (SRRE) that demonstrates how the jurisdiction will meet the IWMA's mandated diversion rate. Pursuant to the IWMA, all California counties must provide at least 15 years of on-going landfill capacity. The California Integrated Waste Management Board administers the IWMA.

The IWMA was amended in 1999, pursuant to the enactment of AB 75, to require each state agency and large state facility to develop and adopt Integrated Waste Management Plans, implement programs to reduce waste disposal, and have their waste diversion performance annually reviewed by CalRecycle (Public Resources Code Sections 40148, 40196.3, and 41821.2, and Chapter 18.5 [Section 42920 et seq.]). AB 75 required all state agencies and large state facilities to divert at least 25% of their solid waste from landfills by January 1, 2002, and at least 50% on and after January 1, 2004.

The IWMA was amended in 2011, pursuant to the enactment of AB 341, to establish a statewide policy goal to divert 75% of solid waste from landfills by 2020. The law focuses on mandatory commercial recycling, and requires California commercial enterprises and public entities that generate 4 or more cubic yards per week of waste, as well as multi-family housing complexes with 5 or more units, to arrange for recycling services.

Mandatory commercial recycling was one of the measures adopted in the AB 32 Scoping Plan by the California Air Resources Board (CARB), pursuant to the California Global Warming Solutions Act (Chapter 488, Statutes of 2006, codified at California Health & Safety Code Section 38500 et seq.). (AB 32 is further described below.) The mandatory commercial recycling measure is focused on increasing waste diversion from commercial uses to reduce greenhouse gas emissions (greenhouse gas resulting from decomposition of organic waste in landfills has been identified as a significant source of emissions contributing to global climate change). The measure establishes an objective of reducing

greenhouse gas emissions by 5 million metric tons of carbon dioxide equivalent. To meet this objective, the commercial sector will be required to recycle an additional 2 to 3 million tons of materials annually by 2020. This regulation reflects the statutory provisions of AB 341 and provides additional procedural clarifications.

The IWMA requires state, county, and local governments to substantially decrease the volume of waste disposed at landfills by the year 2000 and beyond. The act requires each county to submit an Integrated Waste Management Plan to the California Integrated Waste Management Board that includes an adopted Source Reduction and Recycling Element from each of its cities, as well as a County-prepared Source Reeducation and Recycling Element for the unincorporated area. The element identifies existing and future quantities and types of solid waste, an inventory of existing disposal sites, a determination of the plan's economic feasibility, enforcement programs, and implementation schedule.

California Green Building Standards Code (CCR, Title 24, Part 11—CALGreen)

The California Green Building Standards Code (CALGreen) is California's mandatory green building standards code and sets minimum standards requiring new structures to minimize the state's overall carbon output. CALGreen requires that projects recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with Section 5.408 of CALGreen; or meet a local construction and demolition waste management ordinance, whichever is more stringent.

4.19.2.3 Local

Fresno County Construction and Demolition Debris Recycle Program

Beginning January 1, 2014, County of Fresno permit applicants are required to submit a Waste Management Plan for approval prior to permit issuance for projects. At the end of a project, a Waste Log with supporting receipts is required prior to the issuance of the Certificate of Occupancy. Effective January 1, 2017, a minimum of 65% of all waste generated from a permitted project must be repurposed or recycled. The Waste Management Plan and Waste Log required as part of the County of Fresno's Construction and Demolition Debris Recycling Program are designed to assist County compliance with this state mandate, and to provide builders with a means of documenting the waste reduction requirements included in CALGreen, Section 5.408 (Fresno County 2021).

Fresno County General Plan

The Public Facilities and Services Element of the *Fresno County General Plan* (Fresno County 2024) includes the following policies that apply to the proposed project:

Public Facilities and Services Element

Section A. Public Facilities and Services

Goal PF-A: To ensure the timely development of public facilities and to maintain an adequate level of service to meet the needs of existing and future development.

Policy PF-A.2: The County shall ensure through the development review process that public facilities and services will be developed, operational, and available to serve new development. The County shall not approve new development where existing facilities are inadequate unless the applicant can demonstrate that all necessary public facilities will be installed or adequately financed and maintained (through fees or other means).

Policy PF-A.3: The County shall require new industrial development to be served by community sewer, stormwater, and water systems where such systems are available or can feasibly be provided.

Goal PF-C: To ensure the availability of an adequate and safe water supply for domestic and agricultural consumption.

Policy PF-C.4: The County shall support efforts to expand groundwater and/or surface water storage that benefits Fresno County.

Policy PF-C.12: In those areas identified as having severe groundwater level declines or limited groundwater availability, the County shall limit development to uses that do not have high water usage or that can be served by a surface water supply.

Policy PF-C.15: If the cumulative effects of more intensive land use proposals are detrimental to the water supplies of surrounding areas, the County shall require approval of the project to be dependent upon adequate mitigation. The County shall require that costs of mitigating such adverse impacts to water supplies be borne proportionately by all parties to the proposal.

Policy PF-C.16: The County shall, prior to consideration of any discretionary project related to land use, require a water supply evaluation to be conducted. The evaluation shall include the following:

a. A determination that the water supply is adequate to meet the highest demand that could be permitted on the lands in question. If surface water is proposed, it must come from a reliable source and the supply must be made "firm" by water banking or other suitable arrangement.

If groundwater is proposed, a hydrogeologic investigation may be required to confirm the availability of water in amounts necessary to meet project demand. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required.

b. If use of groundwater is proposed, a hydrogeologic investigation may be required. If the lands in question lie in an area of limited groundwater, a hydrogeologic investigation shall be required. Should the investigation determine that significant pumping-related physical impacts will extend beyond the boundary of the property in question, those impacts shall be mitigated.

c. A determination that the proposed water supply is sustainable or that there is an acceptable plan to achieve sustainability. The plan must be structured such that it is economically, environmentally, and technically feasible. In addition, its implementation must occur prior to long-term and/or irreversible physical impacts, or significant economic hardship, to surrounding water users.

Policy PF-C.17: In the case of lands entitled to surface water, the County shall approve only land use-related projects that provide for or participate in effective utilization of the surface water entitlement such as:

a. Constructing facilities for the treatment and delivery of surface water to lands in question;

b. Developing facilities for groundwater recharge of the surface water entitlement;

c. Participating in the activities of a public agency charged with the responsibility for recharge of available water supplies for the beneficial use of the subject lands.

Policy PF-C.23: The County shall require that all new development within the County use water conservation technologies, methods, and practices as established by the County.

Policy PF-C.28: The County shall generally not approve land use-related projects that incorporate a man-made lake or pond that will be sustained by the use of groundwater.

Goal PF-D: To ensure adequate wastewater collection and treatment and the safe disposal of wastewater.

Policy PF-D.6: The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that

permit installation of such disposal facilities without threatening surface or groundwater quality or posing any other health hazards and where community sewer service is not available and cannot be provided.

Goal PF-E: To provide efficient, cost-effective, and environmentally-sound storm drainage and flood control facilities that protect both life and property and to divert and retain stormwater runoff for groundwater replenishment.

Policy PF-E.14: The County shall encourage the use of retention-recharge basins for the conservation of water and the recharging of the groundwater supply.

Goal PF-F: To ensure the safe and efficient disposal or recycling of solid waste generated in the county in an effort to protect the public health and safety.

Policy PF-F.5: The County shall ensure that all new development complies with applicable provisions of the County Integrated Waste Management Plan.

4.19.3 Significance Criteria and Analysis Methodology

4.19.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to utilities and service systems if it would:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
b) Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
e) Not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

The proposed project would rely on existing and proposed on-site septic systems for wastewater treatment and is not served by a wastewater treatment provider. Therefore topic (c) is not applicable and not discussed further in this Draft EIR.

4.19.3.2 Analysis Methodology

The analysis first qualitatively compared the proposed project usage of public utilities and service systems to the existing conditions. Potential project impacts on utilities were evaluated based on the adequacy of existing and planned infrastructure and the capacity to meet additional demand for these services resulting from the proposed project. In determining the level of significance, this analysis assumes that the proposed project would comply with relevant state and local ordinances and regulations, as well as the General Plan policies presented above.

4.19.4 Project Impacts and Mitigation Measures

Impact 4.19-1: Require or Result in the Relocation or Construction of New or Expanded Water, Wastewater Treatment or Storm Water Drainage, Electric Power, Natural Gas, or Telecommunications Facilities, the Construction or Relocation of Which Could Cause Significant Environmental Effects

The proposed project would not connect to any off-site water, wastewater, or stormwater drainage facilities and therefore would not require the construction or relocation of such facilities. Both the Plant Site and Quarry Site would connect to existing natural gas, telecommunications, and electrical infrastructure located along North Friant Road. These connections are part of the proposed project and their construction is analyzed as part of this Draft EIR. No construction or relocation of off-site facilities or of the facilities within the easements located on the project site would be required under the proposed project. Therefore, there would be no impact.

Level of Significance: No impact.

Mitigation Measure: None required.

Impact 4.19-2: Not Have Sufficient Water Supplies Available to Serve the Project and Reasonably Foreseeable Future Development During Normal, Dry and Multiple Dry Years

The proposed project would alter water use at the Plant Site and Quarry Site. The existing and proposed water use at the project sites is summarized in Table 4.19-1, "Existing and Proposed Water Use Summary."

Table 4.19-1
Existing and Proposed Water Use Summary (Acre-Feet per Year[a])

Source	Project Phase				Change from Existing Conditions		
	Existing	*Stage 1*	*Stage 2*	*Reclamation*	*Stage 1*	*Stage 2*	*Reclamation*
PLANT SITE							
San Joaquin River	295	125	0	0	-170	-295	-295
Groundwater Supply Wells[c]	35	60	0	0	25	-35	-35
Reclamation Period Evaporation and Evapotranspiration	--	--	440	440	0	440	440
Plant Site Total:	**330**	**185**	**440**	**440**	**-145**	**110**	**110**
QUARRY SITE[b]							
Groundwater Supply Well[d]	0	1	55	0	1	56	0
Water Use from Ponded Pits (includes indirect losses through evaporation/evapotranspiration)	440	465	495	0	24	55	-440
Reclamation Period Evaporation/Evapotranspiration	--	--	--	585	0	0	585
Quarry Site Total:	**440**	**465**	**550**	**585**	**25**	**111**	**145**
PLANT SITE AND QUARRY SITE TOTAL:	**770**	**650**	**990**	**1,025**	**-120**	**220**	**255**

Table Source: CEMEX 2021.
Table Notes: -- = not applicable to this project phase

a. Values are estimated to the nearest five acre-feet/year, except for values less than five acre-feet/year.
b. The Quarry Site does not currently use San Joaquin River water and no use of San Joaquin River water is proposed by the project.
c. There are two groundwater production wells on the Plant Site. One well is located near the entrance of the site, and the second is located in the northwest portion of the site (locations shown on Figure 2-3).
d. Although there are two groundwater production wells on the Quarry Site, currently no water is used from the groundwater wells on this site. The proposed project would use groundwater from an existing well at the southeast corner of the Quarry Site.

The water use under existing conditions reflects the large volumes of water required to remove fines and clays from the alluvial deposits currently being mined on the Quarry Site. Washing aggregate from solid hard rock uses less water since there are few fines and no clays to remove. Therefore, even though aggregate production would increase during Stage 1 of the proposed project, hard rock would become the majority source (90%) of the aggregate produced, and consequently total water use at both sites would decrease from the existing 770 acre-feet/year to 650 acre-feet/year. Once the aggregate plant at the Quarry Site is in operation during the start of Stage 1 of the proposed project, aggregate processing at the Plant Site would be reduced by an estimated 80%. Total consumptive use of river water at the Plant Site would be reduced from approximately 295 acre-feet/year to an estimated 125 acre-feet/year. The planned increase in concrete production would increase groundwater consumptive use from approximately 35 acre-feet/year to

approximately 60 acre-feet/year. Therefore, overall water use at the Plant Site would decrease by approximately 145 acre-feet/year during Stage 1 operations. At the same time, water use at the Quarry Site would increase by approximately 25 acre-feet/year due to the increased use of water from the ponded pits for aggregate processing and for pumping to the existing groundwater recharge pond and existing and proposed groundwater recharge trenches.

During Stage 2 operations, 100% of the aggregate produced would consist of hard rock. Nevertheless, total water use at the Plant Site and Quarry Site would increase from 650 acre-feet/year to 990 acre-feet/year due to increased evaporation from ponds and ditches and evapotranspiration from revegetation. Note that during Stage 2 of the proposed project, all water use at the Plant Site would be from evaporation and evapotranspiration because all aggregate mining, processing, and production activities will have ceased. At the Quarry Site, approximately 55 acre-feet/year of groundwater from the existing well at the southeast corner of the Quarry Site would be consumed when the ready-mix concrete plant is added to the Quarry Site from the Plant Site at the start of Stage 2 operations; the well located along the western boundary of the Quarry Site would remain unused. Following the completion of Stage 2 and the reclamation of the Quarry Site, water use would increase from 990 acre-feet/year to 1,025 acre-feet/year, for a maximum increase of 255 acre-feet/year relative to existing conditions. The availability of water versus the project water use is shown in Table 4.19-2.

Table 4.19-2
Availability of Water vs Project Use (Acre-Feet Per Year[a])

Site	Water Source	Existing	Stage 1	Stage 2	Reclamation
Plant Site	Total for Plant Site[b]	420	865	600	440
Quarry Site	Total for Quarry Site[c]	635	675	715	600
Total for Sources Plant & Quarry Sites		**1,055**	**1,540**	**1,315**	**1,040**
Total Water Use		**770**	**650**	**990**	**1,025**
Total Sources vs Total Use		**+285**	**+890**	**+325**	**+15**

Table Source: KDSA Plant Site 2020, Quarry Site 2021
Table Notes:
a. Values are estimated to the nearest five acre-feet/year, except for values less than five acre-feet/year
b. Rainfall, groundwater inflow, silt pond and ditch seepage
c. Rainfall, groundwater inflow from alluvial & weathered rock, seepage from recharge ditch & NE Pond

For all project stages water availability is in excess of the proposed project water use. Therefore, the potential of the proposed project to have insufficient water supplies available to serve the project during normal, dry, and multiple dry years would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.19-3: Generate Solid Waste in Excess of State or Local Standards, or in Excess of the Capacity of Local Infrastructure, Otherwise Impair the Attainment of Solid Waste Reduction Goals, or Conflict With Federal, State, and Local Management and Reduction Statutes and Regulations Related to Solid Waste

Solid wastes currently generated at the Plant Site include parts packaging (e.g., wood, cardboard), paper, and office waste. There are three 4-cubic yard bins that are collected by Ponderosa Solid Waste twice per week. Under the proposed project, the same amount of solid waste service would be required, but that additional waste would be generated at the Quarry Site. It is anticipated that three 4-cubic yard bins would be collected by Ponderosa Solid Waste at the Quarry Site twice per week.

The project would comply with all federal, state, and local statutes and regulations related to solid waste. Construction and demolition debris generated during the construction and demolition of mining processing and production facilities on the Plant Site and Quarry site would comply with the Fresno County Construction and Demolition Debris Recycling Program and develop Waste Management Plans and Waste Logs to document how wastes are repurposed and recycled. The project would generate an additional 12-cubic yards per week of waste. The project would be served by permitted Class I, II, and/or III solid waste landfills that have sufficient capacity to accommodate this amount of solid waste. In addition, the project includes the continued use of a recycle plant at the Plant Site. Recycling would be increased at the Plant Site through the import of concrete and asphalt debris on-site that would be recycled into crushed miscellaneous base and recycled asphalt product (under existing conditions, only come-back/return concrete is recycled). Crushed miscellaneous base would be sold and recycled asphalt product would be used on-site in asphalt production. At the completion of Stage 1 operations, the recycle plant would be moved to the Quarry Site and continue to provide these services. This would minimize the amount of waste generated by the proposed project.

For these reasons, the potential of the proposed project to generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, otherwise impair the attainment of solid waste reduction goals, or conflict with federal, state, and local management and reduction statutes and regulations related to solid waste would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

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4.20—WILDFIRE

This section of the Draft EIR describes the existing wildfire setting on and near the Rockfield Quarry; discusses the relevant federal, state, and regional regulatory considerations; and evaluates the wildfire impacts resulting from construction and operation of the proposed project. This section focuses on the effect of the proposed project on wildfire risk. Fire protection services for the proposed project are addressed in Section 4.15, "Public Services," of this Draft EIR.

4.20.1 Environmental Setting

Local Wildfire Hazard

Fire environments are dynamic systems and are influenced by many types of environmental factors and site characteristics. Fires can occur in any environment where conditions are conducive to ignition and fire movement. The three major components of fire environment are vegetation (fuels), climate, and topography. The state of each of these components and their interactions with each other determines the potential characteristics and behavior of a wildfire. In addition, the type, location, and intensity of a wildfire can affect wildlife, vegetation, air quality, water quality, and slope stability to varying degrees, as discussed below.

In California, responsibility for wildfire prevention and suppression is shared by federal, state, and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas. The State of California has determined that some non-federal lands in unincorporated areas with watershed value are of statewide interest and have classified those lands as State Responsibility Areas, which are managed by the California Department of Forestry and Fire Protection (CAL FIRE). All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas. While nearly all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code [PRC] Sections 4201 to 4204 and California Government Code Sections 51175 to 51189). Consistent with this requirement, CAL FIRE maps fire hazards based on zones, referred to as Fire Hazard Severity Zones. CAL FIRE maps three SRA zones: 1) Moderate Fire Hazard Severity Zones; 2) High Fire Hazard Severity Zones; and 3) Very High Fire Hazard Severity Zones. Only the Very High Fire Hazard Severity Zones are mapped for the Local Responsibility Area. Each of the zones influence how people construct buildings and protect property to reduce risk associated with wildland fires. Under state regulations, areas within very high fire hazard risk zones must comply with

specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas.

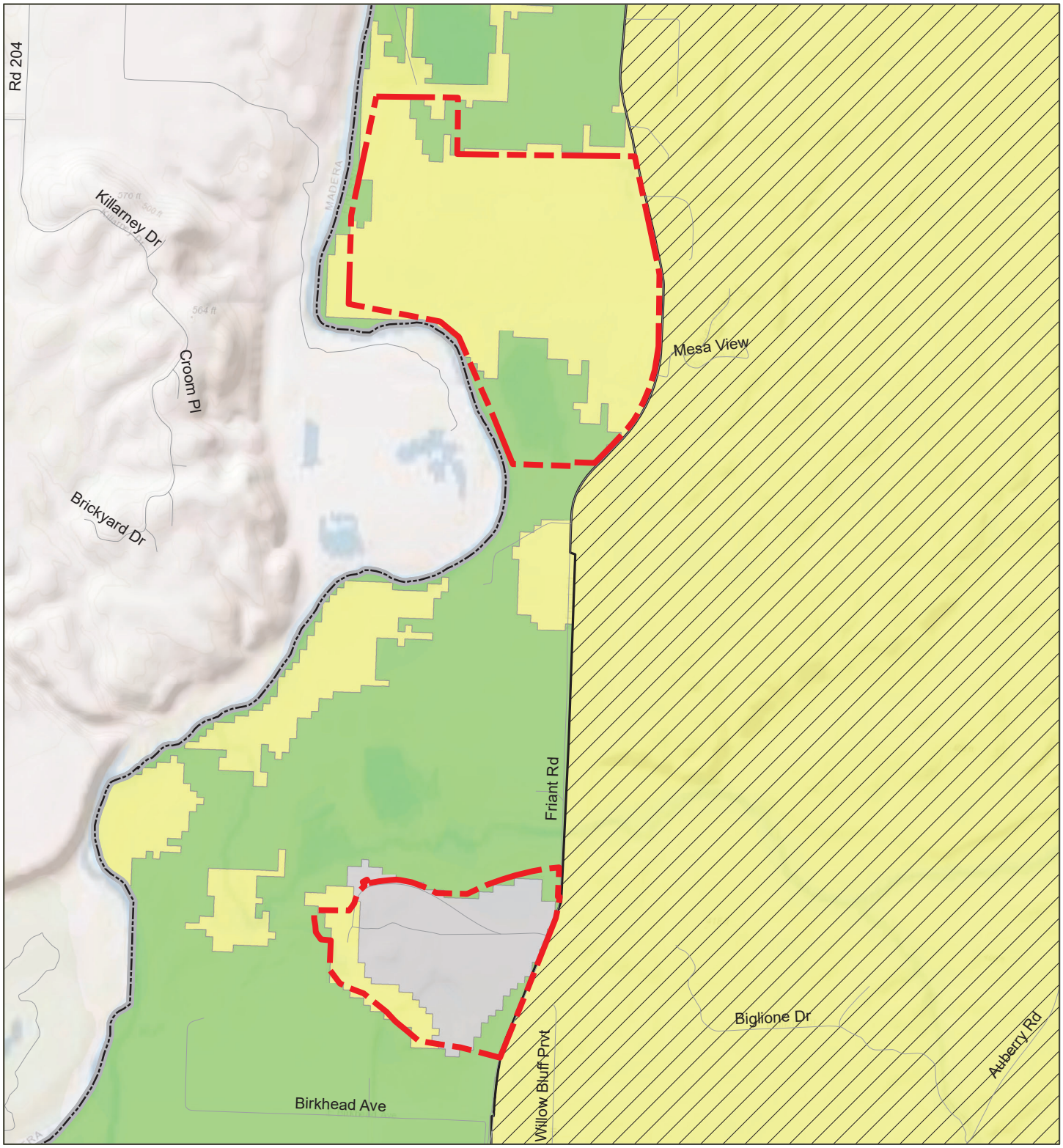
Understanding the fire environment on and adjacent to the Rockfield Quarry is necessary to understand the potential for fire within and around the Plant Site and Quarry Site. As shown on Figure 4.20-1, "Fire Hazard Severity Zones," the areas to the east of the San Joaquin River and west of North Friant Road, which include the Plant Site and Quarry Site, are mapped as a Local Responsibility Area, but not within a Very High Fire Hazard Severity Zone (CAL FIRE 2007). The area immediately to the east of North Friant Road is mapped within a Moderate Fire Hazard Severity Zone in a State Responsibility Area (CAL FIRE 2007).

The following sections provide more information regarding the fire environment associated with the proposed project and potential environmental effects of wildfire burning on or near the project sites.

Vegetation/Fuels

Variations in vegetative cover type and species composition have a direct effect on fire behavior. Some plant communities and their associated plant species have increased flammability based on plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (bark thickness, leaf size, branching patterns), and overall fuel loading. For example, grass dominated plant communities become seasonally prone to ignition and produce lower intensity, higher spread rate fires. The vegetation communities on the Plant Site and Quarry Site are described below.

The habitat assessment for the Plant Site (Appendix E-1, "Rockfield Modification Project Plant Site Habitat Assessment") indicates that the 138.5-acre Plant Site contains four land cover types classified as: disturbed, silt ponds, river supply ditch, and a conveyance ditch for wash water (shown on Figure 4.4-1, "Plant Site Land Cover Types," in Section 4.4, "Biological Resources," of this Draft EIR). Over 80 acres are disturbed areas routinely exposed to on-site mining activities and vehicle traffic. These areas are generally devoid of vegetation and heavily compacted. Over 30 acres consist of three silt ponds located on the eastern half of the Plant Site that receive waste wash from mining operations. The shoreline of each pond supports limited riparian vegetation, while the majority of each pond is open water and unvegetated. The remaining approximately 3 acres consist of a wastewater conveyance ditch and river water delivery ditch.



SOURCES: Fire Hazard Severity Zones—CAL FIRE, 2007; ESRI World Shaded Relief accessed Dec. 2021; ESRI World Topographic Map accessed Dec 2021; ESRI World Streetmap, 2009; compiled by Benchmark Resources in 2021

Site Boundary
County Boundary
Street
State Responsibility Zone

Hazard Class

Non-Wildland/Non-Urban
Urban Unzoned
Moderate

BENCHMARK RESOURCES

N

0 1,000 2,000 4,000 Feet

Fire Hazard Severity Zones
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 4.20-1

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The habitat assessment for the Quarry Site (Appendix E-2, "Rockfield Modification Project Quarry Site Habitat Assessment") indicates that the 352.4-acre Quarry Site contains four land use cover types classified as disturbed, non-native grassland, ponded pits, and developed (shown on Figure 4.4-2, "Quarry Site Land Cover Types" in Section 4.4). Approximately 255 acres consist of disturbed areas routinely exposed to on-site mining activities and vehicle traffic. Approximately 47 acres consist of non-native grasslands. Scattered valley oak trees are located along the western boundary of the Quarry Site, and several large non-native eucalyptus trees are located along the western boundary of the Quarry Site. The remainder of the site consists of ponded pits and paved access roads.

Weather

The climate of the region consists of warm, dry summers and cool, wet winters. Based on measurements collected at the Western Regional Climate Center (WRCC)-operated Friant Government Camp Station in Fresno County. The highest average monthly maximum temperatures of about 100°F occur in July (WRCC 2012a). The lowest average monthly minimum temperatures of about 37°F occur in December and January (WRCC 2012a). Average annual precipitation of approximately 14 inches occurs as rainfall primarily during the months of November through March (WRCC 2012b). During the summer, temperatures often exceed 85 degrees Fahrenheit (°F) coupled with clear sky conditions, which is favorable for the ignition and spread of wildfires.

Topography

The Plant Site and Quarry Site are located in unincorporated Fresno County, north of the City of Fresno and south of the Town of Friant (shown on Figure 1-1, "Regional Location" and Figure 1-2, "Site Location," in Chapter 1, "Introduction," of this Draft EIR). The existing topography immediately surrounding the project sites is generally flat within the valley of the San Joaquin River. The San Joaquin River bluffs, approximately 200 feet in height, are located to the west of the project sites across the San Joaquin River, and river bluffs approximately 80 feet in height are located to the east across North Friant Road. Owens Mountain is located approximately 4.5 miles to the east of the project sites. Millerton Lake is located approximately 3.0 miles north of the Quarry Site.

The Plant Site is relatively flat and slopes gently to the west with surface elevations ranging from 300 to 320 feet above mean sea level (msl). The Quarry Site generally slopes to the south; due to mining excavation, the surface elevations range from approximately 250 to 330 feet msl.

Fire History

Fire history data can provide an understanding of fire frequency, fire type, burn severity, significant ignition sources, and other information relevant to understanding the fire and fuels environment in an area. There have been numerous recorded wildfires within the project study area. Fire history data was obtained from CAL FIRE's Fire and Resources Assessment Program. The Fire and Resources Assessment Program map of fire perimeters from fires that occurred between 1950 and 2018 show that numerous fires occurred within 5 miles of the project site since the 1950s; however, with one exception, the fires were located within the hills west of the San Joaquin River and the hills east of North Friant Road. In the 1980s, one fire perimeter extended onto the Lost Lake Park area west of North Friant Road, and north of the Quarry Site (CAL FIRE 2018a).

4.20.2 Regulatory Setting

4.20.2.1 Federal

National Fire Plan

The National Fire Plan was a presidential directive in 2000 as a response to severe wildland fires that had burned throughout the United States. The National Fire Plan focuses on reducing fire impacts on rural communities and providing assurance for sufficient firefighting capacity in the future. The plan addresses five key points: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability. The plan continues to provide technical, financial, and resource guidance and support for wildland fire management across the United States.

The Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires a state mitigation plan as a condition of disaster assistance. There are two different levels of state disaster plans: "Standard" and "Enhanced." States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Act has also established new requirements for local mitigation plans.

4.20.2.2 State

Strategic Fire Plan for California

The Strategic Fire Plan for California is the state's road map for reducing the risk of wildfire. The most recent version of the plan was finalized in August 2018 and directs each CAL FIRE Unit to prepare a locally specific Fire Management Plan. In compliance with the California Fire Plan, individual CAL FIRE units are required to develop Fire Management Plans for their areas of responsibility. These documents assess the fire situation within each of the 21 CAL FIRE units and six contract counties. The plans

include stakeholder contributions and priorities and identify strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work with the local fire problem. The plans are required to be updated annually (CAL FIRE 2018b).

California Fire Code

The California Fire Code (CFC) is contained within Title 24, Chapter 9 of the California Code of Regulations (CCR). Based on the International Fire Code, the CFC establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to some construction, alteration, movement enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of buildings or structures or any appurtenances connected or attached to such building structures throughout California. The CFC also regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code (CBC) use a hazards classification system to determine the appropriate measures to incorporate to protect life and property.

Fire Hazard Severity Zoning

As described above in Section 4.20.1, CAL FIRE mapped Fire Hazard Severity Zones in Fresno County based on fuel loading, slope, fire weather, and other relevant factors as directed by PRC Sections 4201 to 4204 and California Government Code Sections 51175 to 51189.

California Occupational Safety and Health (Cal/OSHA) Mine Safety Orders

The Cal/OSHA Mine Safety Orders (8 CCR Section 6950 et seq.), including Article 22 (Fire Prevention and Control) regulate the safe operation of mining activities. Article 22 requires the implementation of fire prevention and control measures such as the storage of flammable liquid in accordance with all applicable regulatory standards; equipping fuel lines with valves to cut off fuel at source; ensuring that suitable and adequate fire-fighting equipment is available and strategically placed; and fire alarm systems or adequate fire alarm procedures are in place to promptly warn all persons endangered by a fire.

California Health and Safety Code

Division 11 of the Health and Safety Code establishes regulations related to a variety of explosive substances and devices, including high explosives and fireworks. Section 12000

et seq. establishes regulations related to explosives and explosive devices, including permitting, handling, storage, and transport (in quantities greater than 1,000 pounds).

4.20.2.3 Local

Fresno County Multi-Hazard Mitigation Plan

The purpose of the Fresno County Multi-Hazard Mitigation Plan (Fresno County 2024) is to reduce or eliminate long-term risk to people and property from hazards. Fresno County and the other participating jurisdictions developed this multi-hazard mitigation plan to make the County and its residents less vulnerable to future hazard events. This plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 and underwent a comprehensive update in 2023-2024, building upon the plan that was originally developed in 2009. The County followed a planning process in alignment with FEMA guidance, which began with the formation of a hazard mitigation planning committee (HMPC) comprised of key county, city, and district representatives and other stakeholders. The HMPC conducted a risk assessment that identified and profiled hazards that pose a risk to Fresno County, assessed the County's vulnerability to these hazards, and examined the capabilities in place to mitigate them. Floods, wildfires, severe weather, drought, and agricultural hazards are among the hazards that can have a significant impact on the County. Based on the risk assessment, the HMPC identified goals and objectives for reducing the County's vulnerability to hazards. To meet identified goals and objectives, the plan recommends a number of mitigation actions that include actions specific to each participating jurisdiction. This plan has been formally adopted by the County and the participating jurisdictions and will be updated every five years at a minimum.

With regards to wildfire hazards, the Fresno County Multi-Hazard Mitigation Plan indicates that the most intense fires occur in forested areas of the county, but that even moderate and low-risk areas have experienced wildfires and will continue to do so. The plan further notes that areas of greatest fire risk correspond to the locations with the greatest number of historic events.

Fresno-Kings Unit Strategic Fire Plan

The Fresno-Kings Unit Strategic Fire Plan (CAL FIRE and Fresno County Fire Protection District 2023) is a comprehensive Strategic Fire Plan for the Fresno-Kings Unit that address the needs of the ever-changing environment. The Fresno-Kings Unit has responsibility for protecting 955,167 State Responsibility Area Acres and 1,626,782 Local Responsibility Acres with a Cooperative Fire Protection Agreement with the Fresno County Fire Protection District. There is strong collaboration within the Unit with input from various groups such as the Highway 168 Fire Safe Council, Southern California

Edison, Pacific Gas and Electric, Sierra National Forest, Sequoia National Forest, and various cities and Fire Districts/Departments. The Unit has 17 communities that are listed as high risk for damage from wildfire on the Federal Registrar's "Communities at Risk."

The plan facilitates development of a wide range of management prescriptions, utilizing every program and tool available to the Department, for protecting assets at risk. These tools include every conceivable combination of fuels reduction, ignition management, fire-safe engineering activities, code development and enforcement, public education, and forest health enhancements to protect Public and private assets.

Each year, a report must be completed on the success of the accomplishments of the Statewide and Unit specific goals and objectives. Each year annual ignitions summaries must also be included. A complete list of specific accomplishments within each of the Battalions and Bureaus must be included when objectives are worked on or completed.

Fresno County General Plan

The *Fresno County General Plan* (Fresno County 2024) Health and Safety Element include policies related to fire protection. The policies applicable to the proposed project are listed below.

Health and Safety Element

Section B. Fire Hazards

Goal HS-B: To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.

Policy HS-B.1: The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.

Policy HS-B.7: The County shall require new discretionary development projects to have adequate access for fire and emergency vehicles and equipment. All major subdivisions shall have a minimum of two (2) points of ingress and egress. The County shall implement feasible recommendations in AB 2911 Office of the State Fire Marshall Subdivision Survey Reports, which survey subdivisions without a secondary means of egress routes for evacuation and other fire safety factors.

Policy HS-B.10: The County shall refer development proposals in the Very High Fire Hazard Severity Zones and State Responsibility Areas of the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety standards. If dual responsibility exists, both

agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall apply.

Policy HS-B.14: The County shall require new discretionary development to have water systems that meet fire flow requirements as determined by applicable California Fire Code requirements and/or National Fire Protection Association (NFPA) standards under the authority of the Chief Fire Code Official and as referenced in County Ordinance Code. Where minimum fire flow is not available to meet these standards, alternate fire protection measures, including sprinkler systems and on-site water supply or storage, shall be identified and may be incorporated into development if approved by the appropriate fire protection agency. The County shall require that all public water providers maintain the long-term integrity of adequate water supplies and flow to meet fire suppression needs.

4.20.3 Significance Criteria and Analysis Methodology

4.20.3.1 Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact to aesthetics if it were located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and if the proposed project would:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan.
b) Due to slope, prevailing winds, and other factors exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.20.3.2 Analysis Methodology

Map and reports prepared by CAL FIRE, the proposed Surface Mining and Reclamation Plan, and Conditional Use Permit application materials were reviewed to determine the proposed project's potential impacts related to wildfire. Potential impacts related to

wildfire were determined qualitatively by comparing Stage 1, Stage 2, and reclamation stage conditions to existing conditions. In determining the level of significance, this analysis assumes that the proposed project would comply with relevant state and local ordinances and regulations, as well as the general plan policies presented above.

4.20.4 Project Impacts and Mitigation Measures

Impact 4.20-1: Substantial Impairment of an Adopted Emergency Response Plan or Emergency Evacuation Plan

The proposed project would have the potential to interfere with an adopted emergency response plan or emergency evacuation plan if the mining, processing, production, and reclamation activities under the proposed project could result in the complete or partial closure of roadways, interfere with identified evacuation routes, restrict access for emergency response vehicles, or restrict access to critical facilities such as hospitals or fire stations. The Fresno County Multi-Hazard Mitigation Plan does not identify specific evacuation routes within the County; however, the Town of Friant and other inhabited areas north of the Rockfield Quarry located along North Friant Road would potentially use North Friant Road and other roadways that would be used by automobiles and trucks associated with the proposed project (i.e., Willow Avenue, Road 206/North Fork Road, Road 145/State Route 145 as described in Section 4.17, "Transportation," of this Draft EIR) as an evacuation route.

The proposed project would not require the closure or partial closure of any public roads, including North Friant Road, and therefore would not inhibit access by emergency vehicles or interfere with an evacuation plan. There are no critical facilities, such as hospitals or fire stations, located in the vicinity of the Plant Site or Quarry Site. The nearest fire stations and hospitals are located more than 2 miles from the Rockfield Quarry. Therefore, the proposed project would not have the potential to interfere with access to these facilities.

During Stage 1 operations, trucks travelling to and from the Plant and Quarry Sites could interfere with emergency response vehicles traveling along North Friant Road or with vehicular traffic along North Friant Road during emergency evacuation procedures if quarry trucks significantly blocked traffic along North Friant Road. During Stage 2 trucks traveling along North Friant Road to and from the Quarry Site could also interfere with emergency response vehicles traveling along North Friant Road. However, North Friant Road is a four-lane divided road in the vicinity of the Plant Site and the Quarry Site. Therefore, there is sufficient room along North Friant Road for emergency vehicles to safely pass trucks along North Friant Road. Furthermore, truck traffic would continue to use existing southbound acceleration lanes and northbound left-hand turn pockets at

both the Plant Site and Quarry Site entrances. The use of these lanes would prevent trucks entering and leaving the Plant Site and Quarry Site from blocking emergency vehicles travelling along North Friant Road. Automobiles and trucks associated with the proposed project would be required to obey all traffic safety laws, including Section 21806(a) of the California Vehicle Code, which requires vehicles to yield the right-of-way and drive to the right side of the roadway and stop until emergency vehicles have passed. Therefore, the automobile and truck trips generated by the proposed project would not interfere with emergency response vehicles. Upon completion of reclamation, there would be only occasional vehicular travel to and from the Plant Site and Quarry Site, and therefore there would be no potential to interfere with an emergency response plan or emergency evacuation plan.

For these reasons, the potential of Stage 1 operations, Stage 2 operations, or the reclamation stage of the proposed project to impair implementation of an adopted emergency response plan or emergency evacuation plan would be less than significant.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.20-2: Exacerbation of Wildfire Risks Due to Slope, Prevailing Winds, and Other Factors, That Could Thereby Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire

As described above under Section 4.20.1, the project sites and adjacent areas are relatively flat. The San Joaquin River bluffs, approximately 200-feet in height, are located to the west of the project sites across the San Joaquin River, and river bluffs approximately 80-feet in height are located to the east across North Friant Road. The project sites are located within Local Responsibility Area that is not a Very High Fire Hazards Severity Zone. The area immediately to the east of North Friant Road is mapped within a Moderate Fire Hazard Severity Zone in a State Responsibility Area (CAL FIRE 2007).

Plant Site

Stage 1 operations at the Plant Site would excavate the site to a depth of approximately 85 feet below the ground surface (bgs), thereby creating new slopes within the Plant Site. However, because the area would be under active mining, vegetation would only be present along some of the quarry pit slopes (the slopes would be revegetated with native grasses and forbs within two years of the completion of each of the six phases of excavation), and within the existing required 50-foot setback from North Friant Road and 25-foot setbacks from other property lines. Due to the limited vegetation present on the

Plant Site during Stage 1 operations, the slopes created during Stage 1 operations on the Plant Site would not exacerbate fire risk. Furthermore, the mining and processing operations, which include the handling of flammable hazardous materials such as fuel, would continue to comply with all relevant state and local regulations including the California Fire Code, Cal/OSHA Mine Safety Orders, and all applicable CUPA programs related to hazardous materials storage and handling. This would minimize the risk of occurrence of a fire on the Plant Site due to improper storage and handling of flammable hazardous materials. The proposed Stage 1 operations would involve mining and processing activities, and such activities do not have the potential to alter prevailing winds. For these reasons, the potential for Stage 1 operations to exacerbate fire risk at the Plant Site would be less than significant.

Upon completion of mining at the Plant Site at the end of Stage 1, operations at the Plant Site would cease, and all equipment and septic systems would be removed. An approximately 105-acre pond would be formed above the reclaimed bottom of the quarry pit from groundwater and rainfall, as shown on Figure 2-9, "Plant Site Final Reclaimed Conditions," in Chapter 2, "Project Description," of this Draft EIR. Slopes surrounding the approximately 105-acre reclaimed pond would be seeded with native grasses and forbs and planted with native plants. Because the reclamation of the Plant Site would create open space land uses with the majority of the site converted to a water body and remaining areas revegetated with native vegetation, there would be limited fuels on the Plant Site to exacerbate fire risk. Therefore, the potential of the reclamation of the Plant Site to exacerbate fire risk would be less than significant.

Quarry Site

Stage 1 and Stage 2 operations at the Quarry Site would excavate the site to a depth of approximately 600 feet bgs, thereby creating new slopes within the Quarry Site. However, because the area would be under active mining, vegetation would only be present along some of the quarry pit slopes (the slopes would be revegetated with native grasses and forbs within two years of the completion of each of the five phases of excavation) and within the existing required setbacks specified in Section 2.5.2.2, "Quarry Site Existing Conditions," of Chapter 2 of this Draft EIR. The valley oak and eucalyptus trees located along the southern boundary of the Quarry Site would not be disturbed. Due to the limited vegetation present on the Quarry Site during Stage 1 and Stage 2 operations, the slopes created during these operations would not exacerbate fire risk.

The proposed mining operations, which would include blasting, would require the handling of flammable and explosive hazardous materials. Furthermore, the proposed processing operations would bring new processing equipment to the Quarry Site that would require the use of flammable hazardous materials for fuel. The use and handling

of these materials would be required to comply with all relevant state and local regulations including the California Fire Code, Cal/OSHA Mine Safety Orders, and all applicable CUPA programs related to hazardous materials storage and handling. With regards to explosives used in blasting, the *Blasting Protocols* (Appendix H-6) required to be implemented by Mitigation Measure 4.13-6, prohibit the storage of explosive materials on the Quarry Site. The blasting contractor would deliver adequate quantities of explosives to the site on the days when blasting is planned. All unused explosives and detonators would be returned to the blasting contractor's secure off-site magazines. Compliance with existing regulations and combined with the off-site storage of explosives and the handling of explosives by a licensed blasting contractor would minimize the risk of occurrence of a fire on the Quarry Site due to improper storage and handling of flammable and explosive hazardous materials. The proposed Stage 1 and Stage 2 operations would involve mining, blasting, and aggregate processing activities, and such activities do not have the potential to alter prevailing winds. For these reasons, the potential for Stage 1 and Stage 2 operations to exacerbate fire risk at the Quarry Site would be less than significant.

Upon completion of mining at the Quarry Site at the end of Stage 1 and Stage 2, operations at the Quarry Site would cease, and all equipment and septic systems would be removed. An approximately 107-acre pond would be formed above the reclaimed bottom of the quarry pit from groundwater and rainfall, as shown on Figure 2-10, "Quarry Site Final Reclaimed Conditions," in Chapter 2 of this Draft EIR. Slopes surrounding the approximately 107-acre reclaimed pond would be seeded with native grasses and forbs and planted with native plants. Because the reclamation of the Quarry Site would create open space land uses with a large central water body and remaining areas revegetated with native vegetation, there would be limited fuels on the Quarry Site to exacerbate fire risk.

In summary, compliance with existing hazardous materials regulation and implementation of the Blasting Protocols required by Mitigation Measure 4.13-6, would ensure that the potential of Stage 1 and Stage 2 operations and final reclamation activities on the Plant Site and Quarry Site to exacerbate fire risk would be less than significant.

Level of Significance Before Mitigation: Potentially significant.

Mitigation Measures: *Implement Mitigation Measure 4.13-6.*

Level of Significance After Mitigation: Less than significant.

Impact 4.20-3: Installation or Maintenance of Associated Infrastructure (Such as Roads, Fuel Breaks, Emergency Water Sources, Power Lines or Other Utilities) That May Exacerbate Fire Risk or That May Result in Temporary or Ongoing Impacts to the Environment

The quarry roads developed on the Plant Site and Quarry Site would be located within unvegetated, disturbed areas, and therefore would not have the potential to exacerbate fire risk. The proposed asphalt plant at the Plant Site and the proposed processing and production facilities at the Quarry Site would connect to existing natural gas, telecommunications, and/or electrical infrastructure located along North Friant Road. As described under Impact 4.20-2 above, during Stage 1 and Stage 2 mining, processing, and production operations, the majority of both sites would be disturbed without vegetation. The utilities would primarily be constructed in these disturbed, unvegetated areas that are not subject to fire risk. Construction of the utilities within the required 50-foot setback along North Friant Road could result in a fire should a spark or heat from construction equipment come into contact with the non-native grassland vegetation along North Friant Road. These vegetated areas do not contain trees and are isolated from the vegetated areas east of North Friant Road. Therefore, although it is possible that a spark could occur during development of the infrastructure and result in a fire, the potential of the fire to spread would be limited, and the amount of vegetative fuel in these areas is also limited due to the lack of trees. Furthermore, the Stage 1 and Stage 2 operations would be required to comply with Cal/OSHA Mine Safety Orders, which requires mining operators to ensure that that suitable and adequate fire-fighting equipment is available and strategically placed. This would facilitate response to any fire that could occur in these areas. Upon completion of construction, the utilities would be located underground and would not have the potential to exacerbate fire risk. Therefore, due to the limited vegetation at the Plant Site and Quarry Site, and due to the fire safety requirements, that would be in place during Stage 1 and Stage 2 operations, the risk of wildland fire posed by development of utilities connections would be less than significant.

The reclamation of the Plant Site and Quarry Site would not involve the development or maintenance of any utility infrastructure, and as part of reclamation, all facilities on the site, and their utilities connections, would be removed. After reclamation, no maintenance of utilities would be required. Therefore, the reclamation of the sites would not exacerbate fire risk due to installation or maintenance of infrastructure.

Level of Significance: Less than significant.

Mitigation Measure: None required.

Impact 4.20-4: Exposure of People or Structures to Significant Risks, Including Downslope or Downstream Flooding or Landslides, as a Result of Runoff, Post-Fire Slope Instability, or Drainage Changes

Wildfires can greatly reduce the amount of vegetation within a burned area. Plant roots stabilize the soil and above-ground plant parts slow water, allowing it to percolate into the soil. Removal of surface vegetation resulting from a wildfire reduces the ability of the soil surface to absorb rainwater and can allow for increased runoff that may include large amounts of debris. If water-resistant soil conditions exist post-fire, the rate of surface water runoff is increased as water percolation into the soil is reduced (Moench and Fusaro 2012). The potential for surface runoff and debris flows therefore increases significantly for areas recently burned by large wildfires (Moench and Fusaro 2012).

As described above in Section 4.20.1, the existing topography immediately surrounding both the Plant Site and Quarry Site is generally flat within the valley of the San Joaquin River. Furthermore, both the Plant Site and Quarry Site currently consist of predominantly unvegetated disturbed areas. The implementation of Stage 1 and Stage 2 of the proposed project would remove most of the remaining vegetation on the project sites. Under the reclaimed condition, the majority of both project sites would be covered by ponds, as shown on Figure 2-9 and Figure 2-10 in Chapter 2 of this Draft EIR. Therefore, vegetation cover on these sites would not be critical to slope stability or stormwater infiltration during Stage 1, Stage 2, or the post-reclamation stage of the proposed project. Because the Plant Site and Quarry Site are located in a relatively flat area along the San Joaquin River, and because vegetation on these sites would not be critical to slope stability or infiltration on the project sites during Stage 1 operations, Stage 2 operations, or the reclamation stage, the potential of the proposed project to expose people or structures to significant risks of downslope or downstream flooding or landslides due to post-fire slope instability or drainage and runoff changes would be less than significant.

Slope stability concerns related to proposed mining and reclamation activities are discussed in Section 4.7, "Geology and Soils," and potential impacts of drainage changes as a result of proposed mining and reclamation activities are discussed in Section 4.10, "Hydrology and Water Quality," of this Draft EIR.

Level of Significance: Less than significant.

Mitigation Measure: None required.

5—CUMULATIVE IMPACTS ANALYSIS

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5—CUMULATIVE IMPACTS

CEQA Guidelines Section 15130 requires that an Environmental Impact Report (EIR) discuss cumulative impacts of a project and determine whether the project's incremental effect is "cumulatively considerable." The definition of cumulatively considerable is provided in Section 15065(a)(3):

> "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

According to Section 15130(b) of the CEQA Guidelines:

> [t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

For purposes of this Draft EIR, the proposed project would be considered to have a significant cumulative effect if:

- the cumulative effects of other past, present, and reasonably foreseeable future projects without the proposed project are not significant and the proposed project's incremental impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or
- the cumulative effects of other past, present, and reasonably foreseeable future projects without the proposed project are already significant and the project contributes measurably to the effect. The standards used herein to determine measurability are that either the impact must be noticeable or must exceed an established threshold of significance.

This Draft EIR identifies potentially significant environmental impacts associated with implementation of the proposed project, which are addressed by resource topic in Chapter 4, "Environmental Analysis." These issues, and others that could have cumulatively considerable significant effects, are discussed below in the context of cumulative development.

5.1 GEOGRAPHIC SCOPE

The geographic area that could be affected by the proposed project varies depending on the type of environmental resource being considered. When the effects of the project are considered in combination with those other past, present, and reasonably foreseeable future projects to identify cumulative impacts, the other projects that are considered may also vary depending on the type of environmental effects being assessed. The general geographic area associated with different environmental effects of the proposed project defines the boundaries of the area used for compiling the list of projects considered in the cumulative impact analysis. For example, the analysis of air quality criteria pollutant emissions is based on regional-scale growth; thus, a regional perspective must be used to assess cumulative air quality impacts. In the case of aesthetic impacts, given the localized impact area of concern, a smaller more localized area surrounding the immediate project area, as well as a community scale that encompasses the larger community within which the proposed project is located, would be appropriate for consideration. The geographic scope for each environmental issue area is defined at the beginning of the corresponding discussion below.

5.2 RELATED PROJECTS

5.2.1 Analysis Method

The CEQA Guidelines allow for the use of two methods to determine the scope of related projects for the cumulative impact analysis (CEQA Guidelines Section 15130):

> **List Method:** A list of past, present, and reasonably foreseeable future projects producing related or cumulative impacts, including those projects outside the control of the agency.
>
> **Regional Growth Projections Method:** A summary of projections contained in an adopted general plan or related planning document that is designed to evaluate regional or areawide conditions.

For the purpose of this Draft Environmental Impact Report, both the list method and the regional growth projections method are used depending on the nature of the resource area being analyzed. For instance, the list method is appropriate for topics such as aesthetics, geology and soils, and noise due to the localized nature of potential impacts. Whereas the regional growth projections method is appropriate for resource areas with a larger geographic scope, such as air quality, energy, and transportation. A description of the geographic scope and chosen analysis method is provided at the beginning of each cumulative impact evaluation.

5.2.2 List of Nearby Projects

A summary of the projects identified at or near the project sites is provided in Table 5-1, "List of Nearby Projects," and shown in Figure 5-1, "Cumulative Projects." This is not intended to be an all-inclusive list of projects in the region, but rather a list of projects nearby that have some relation to the setting conditions of the project and are: (1) completed, (2) currently under construction or implementation or beginning construction or implementation, (3) proposed and under environmental review, or (4) reasonably foreseeable. While the project site is located in an unincorporated area of Fresno County, it is also near the City of Fresno and County of Madera. For this reason, relevant projects in each of the aforementioned jurisdictions are also included in Table 5-1.

Table 5-1
List of Nearby Projects

Figure 5-1 Map Key	Project Name	Description of Project	Jurisdiction/ Landowner	Status
FRESNO COUNTY				
1	Friant Ranch Specific Plan	Mixed use community with 2,996 residential units, 250,000 square feet, parks, trails, open space, and conservation areas	Fresno County	Approved
2	Millerton New Town Specific Plan	5,074 dwelling units on 2,000 acres	Fresno County	Approved
3	Derrell's Mini Storage	Commercial development located at intersection of East Copper Ave and Auberry Rd	Fresno County	Approved
MADERA COUNTY				
4	Tesoro Viejo	5,190 dwelling units and 3 million square feet of non-residential space on 1,574 acres	Madera County	Approved
5	Riverstone	6,578 dwelling units	Madera County	Approved
6	Preserve at Millerton (aka Northshore at Millerton)	2,593 residential units, 373 commercial units, 629 acres open space	Madera County	Approved
7	Austin Quarry	348-acre aggregate mine; located at SR 145 and SR 41	Madera County	Approved
8	Gunner Ranch Area Plan	2,840 dwelling units, 2 million square feet commercial, 1 million square feet hospital uses and community facilities	Madera County	Approved
9	Community Hospital and Medical Center	200-acres purchased for future medical facility	Madera County	Approved
10	Paseo Pacifico	150.4 residential acres, 769 residential units, 119.4 acres non-residential	Madera County	Pending
11	Tatham Development	Proposed specific plan for 1,250 acres	Madera County	Pending
CITY OF FRESNO				
12	Copper River Ranch	Mixed use development consisting of 3,216 residential units and 250,000 square feet of mixed-use office/commercial.	City of Fresno	Approved

Figure 5-1 Map Key	Project Name	Description of Project	Jurisdiction/ Landowner	Status
13	Tapestry III Tract 6195	89 residential units on 17.58 acres.	City of Fresno	Pending
14	West Area Neighborhoods Specific Plan	Specific plan guiding development of over 6,000 acres with a maximum build out potential of 57,891 residential units and 52,810,183 square feet of non-residential uses.	City of Fresno	Pending
CITY OF CLOVIS				
15	Tract 6200	Residential; 586 units	City of Clovis	Approved

5.3 CUMULATIVE IMPACTS EVALUATION

Each resource section below provides a summary listing the impacts identified in each resource section (Sections 4.1 through 4.20) and is followed by a discussion of the potential for these project impacts to contribute to cumulative impacts.

5.3.1 Aesthetics

Section 4.1, "Aesthetics and Visual Resources," identifies the following project impacts:

- Impact 4.1-1: Have a Substantial Adverse Effect on a Scenic Vista (**significant and unavoidable with mitigation**)
  - Mitigation Measure 4.1-1, "Rock Staining to Reduce Visual Contrast"
- Impact 4.1-2: Substantially Damage Scenic Resources, Including, But Not Limited to, Trees, Rock Outcroppings, and Historic Buildings Within a State Scenic Highway (**no impact**)
- Impact 4.1-3: In Nonurbanized Areas, Substantially Degrade the Existing Visual Character or Quality of Public Views (i.e., views experienced from publicly accessible vantage points) of the Project Sites and Their Surroundings (**significant and unavoidable with mitigation**)
  - Mitigation Measure 4.1-1, "Rock Staining to Reduce Visual Contrast"
- Impact 4.1-4: Creation of a New Source of Substantial Light and Glare That Would Adversely Affect Day or Nighttime Views in the Vicinity of the Project Sites (**less than significant**)

Potential effects to aesthetic conditions are primarily local- and community-level issues. Consideration of cumulative effects would include whether the effects of the proposed project would be viewed in combination with other projects that could affect or change the visual environment. Generally, projects located within a one-mile radius of a project site would be identified as potential contributors to the aesthetics cumulative setting. As shown on Figure 5-1, there are two projects within one mile of the Quarry Site: (1) Friant Ranch and (2) Tesoro Viejo. There are no cumulative projects identified within one mile of the Plant Site.

Although the Friant Ranch project is located less than one mile northeast of the Quarry Site, the topography of the land between the sites consists of rolling hills that completely obscure views of the Friant Ranch Specific Plan area from the Quarry Site and adjacent segment of North Friant Road. The land use plan for the Tesoro Viejo development provides for an open space buffer along the project's river frontage that would preserve the existing topography and riparian habitat.

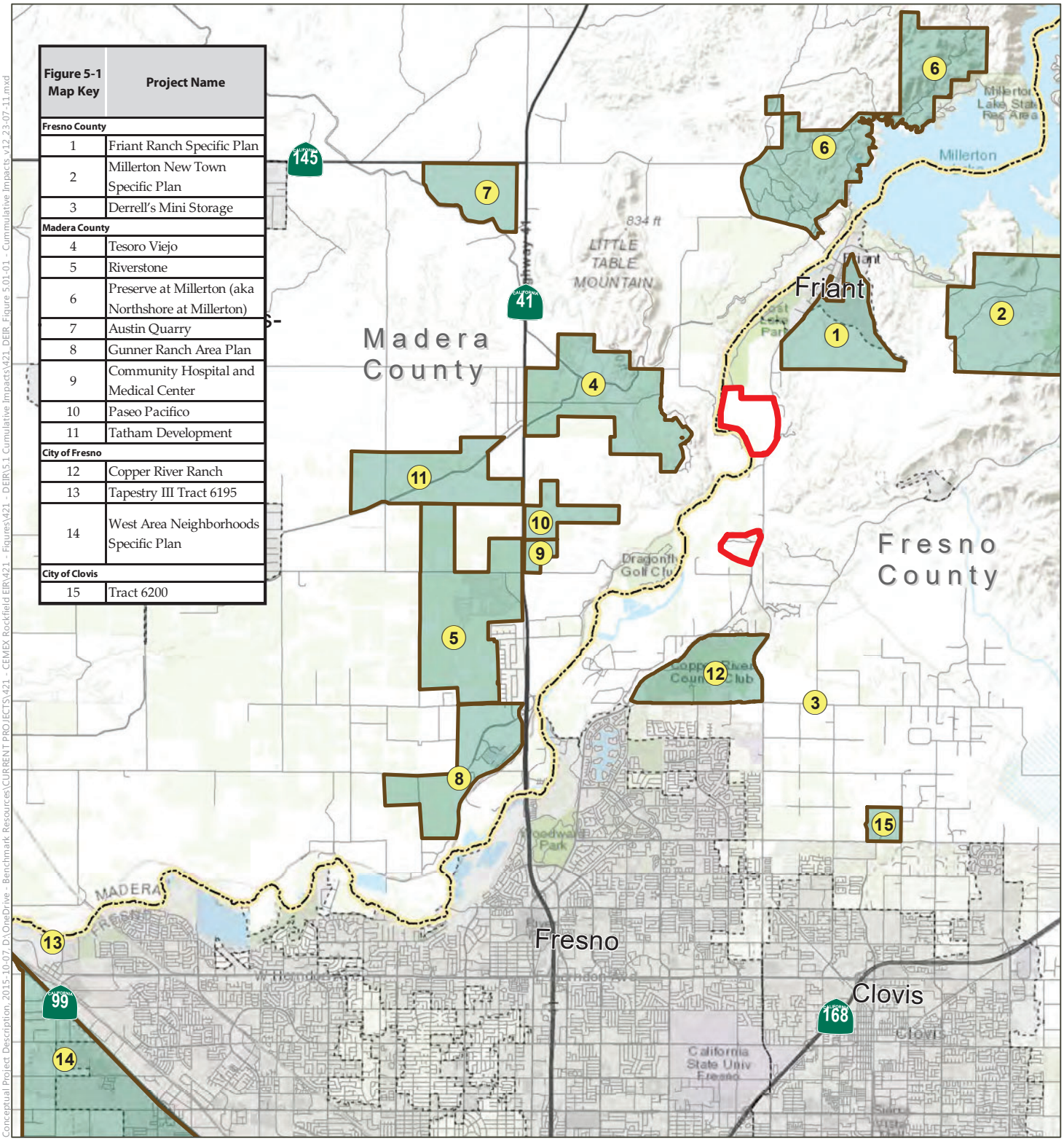

Figure 5-1 Map Key	Project Name
Fresno County	
1	Friant Ranch Specific Plan
2	Millerton New Town Specific Plan
3	Derrell's Mini Storage
Madera County	
4	Tesoro Viejo
5	Riverstone
6	Preserve at Millerton (aka Northshore at Millerton)
7	Austin Quarry
8	Gunner Ranch Area Plan
9	Community Hospital and Medical Center
10	Paseo Pacifico
11	Tatham Development
City of Fresno	
12	Copper River Ranch
13	Tapestry III Tract 6195
14	West Area Neighborhoods Specific Plan
City of Clovis	
15	Tract 6200

SOURCES: Peter Engineering Group 2020; ESRI World Shaded Relief accessed June 2023, ESRI World Topographic Map accessed June 2023; ESRI World Street Map, 2009; Adapted by Benchmark Resources in 2023

Site Boundary
Cumulative Projects
County Boundary
City Boundary
Major Road
Street

BENCHMARK RESOURCES

N

0 1 2 4 Miles

Cumulative Projects
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 5-1

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This buffer would continue to provide visual screening between the site, the river corridor, and areas to the east across the river. The Tesoro Viejo Draft EIR (SCH No. 2006111123; Impacts 4.1-1 through 4.1-3) determined that the Tesoro Viejo project's impacts on scenic vistas and the visual character and quality of the site would be less than significant. As shown in Table 4.1-3, "U.S. Bureau of Land Management Visual Project Impact Ratings at Nearby Viewpoints," the proposed project would have no effect on views from the river corridor during mining operations and would have a beneficial effect on views from this location upon reclamation of the Quarry Site. Thus, the proposed project in combination with the Friant Ranch Specific Plan and Tesoro Viejo development would have a less than significant cumulative impact on aesthetics.

5.3.2 Agricultural and Forestry Resources

Section 4.2, "Agricultural and Forestry Resources," identifies the following project impacts:

- Impact 4.2-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as Shown on the Maps Prepared Pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to Non-Agricultural Use (**no impact**)
- Impact 4.2-2: Conflict with Existing Zoning for Agricultural Use, or a Williamson Act Contract (**no impact**)
- Impact 4.2-3: Conflict With Existing Zoning for, or Cause Rezoning of, Forest Land (as Defined in Public Resources Code Section 12220(g)), Timberland (as defined by Public Resources Code Section 4526), or Timberland Zoned Timberland Production (as Defined by Government Code Section 51104(g)) (**no impact**)
- Impact 4.2-4: Result in the Loss of Forest Land or Conversion of Forest Land to Non-Forest Use (**no impact**)
- Impact 4.2-5: Involve Other Changes in the Existing Environment Which, Due to Their Location or Nature, Could Result in conversion of farmland, to Non-Agricultural use or Conversion of Forest Land to Non-Forest Use (**less than significant**)

The geographic scope of the cumulative analysis for agricultural and forestry resources is Fresno County. The conversion of productive farmland and forestland in the county is primarily a result of cumulative growth at the urban fringe and in rural areas. Between 2014 and 2018, a total of 59,589 acres of Important Farmland in Fresno County were converted to another use, including 8,865 acres which were converted to Urban and Built-Up Land (DOC). The loss of productive farmland and forestland is generally considered an irreversible change, as developed land is rarely converted back to its original

condition. For this reason, the conversion of any Important Farmland or forestland would contribute significantly to the cumulative loss of these resources in the county.

As discussed in Impacts 4.2-1 and 4.2-5, the proposed project would not result in the conversion of Important Farmland, either directly or indirectly. Further, as discussed in Impact 4.2-2, the project would not conflict with the agricultural zoning for the project sites. Therefore, the proposed project's contribution to the cumulative loss of Important Farmland in Fresno County would be less than cumulatively considerable. As discussed in Impacts 4.2-4 and 4.2-5, the project sites do not contain any forestland or timberland, and the project would not directly or indirectly convert any forestland or timberland. Further, the project sites are not zoned for forestry resources (Impact 4.2-3). Therefore, the proposed project's contribution to the cumulative loss of forestland and timberland in Fresno County would be less than significant.

5.3.3 Air Quality

Section 4.3, "Air Quality," identifies the following project impacts and mitigation measures:

- Impact 4.3-1: Conflict With or Obstruct Implementation of the Applicable Air Quality Plan (**less than significant**)
- Impact 4.3-2: Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for Which the Project Region Is Non-Attainment Under an Applicable Federal or State Ambient Air Quality Standard (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.3-2, "Fugitive Dust Control Plan"
- Impact 4.3-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.3-2, "Fugitive Dust Control Plan"
- Impact 4.3-4: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.3-4, "Asphalt Plant Emissions Controls"

The geographic scope of the cumulative analysis for air quality is the San Joaquin Valley Air Basin, which is currently in non-attainment status for ozone (one-hour and eight-hour), PM_{10}, and $PM_{2.5}$. As described in greater detail in the following discussion, the list method of cumulative impact analysis was used for this resource area.

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of an air basin is a direct result of past and present development. Further, new emissions-generating activities in the region could jeopardize the attainment of ambient air quality standards. For these reasons, SJVAPCD considers a project's individual emissions of criteria air pollutants to be both individually significant and cumulatively considerable if they exceed the applicable significance thresholds. Further, according to SJVAPCD guidance (2015), a lead agency should also consider the cumulative impact of multiple simultaneously proposed projects, located in the same area.

The project's estimated criteria air pollutant emissions are shown and compared to applicable significance thresholds in Section 4.3, "Air Quality," under Impact 4.3-2. The impact evaluation concludes that, with implementation of Mitigation Measure 4.3-2, the project's annual emissions and resulting pollutant concentrations would not exceed applicable SJVAPCD significance thresholds. Therefore, the project's individual emissions of criteria air pollutants would not be cumulatively considerable according to SJVAPCD guidance (2015).

Table 5-1 provides a list of reasonably foreseeable projects in the region and Figure 5-1 shows the location of each of these projects in relation to the project sites. Construction and operation of these projects would occur simultaneously with project implementation potentially resulting in air emissions which, together, could exceed significance thresholds. These projects are subject to SJVAPCD rules and have undergone CEQA review requiring implementation of all feasible mitigation measures available to reduce air emissions to below significance thresholds and ensure consistency with the applicable air basin plans. Implementation of the mitigation measures presented in Section 4.3 of this DEIR would similarly reduce the proposed project's air emissions below significance thresholds and ensure consistency with SJVAPCD's air basin plan. Therefore, the project's contribution to cumulative air quality impacts would be less than cumulatively considerable.

5.3.4 Biological Resources

Section 4.4, "Biological Resources," identifies the following project impacts and mitigation measures:

- Impact 4.4-1: Have an Adverse Effect, Directly or Indirectly, on Special-Status Plant or Wildlife Species on the Plant Site or Quarry Site During Mining Operations (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.4-1a, "Burrowing Owl"
  - Mitigation Measure 4.4-1b, "Western Pond Turtle and Western Spadefoot"

  - Mitigation Measure 4.4-1c, "Nesting Birds"
- Impact 4.4-2: Have An Adverse Effect, Directly or Indirectly, on Special-Status Wildlife Species in Riparian Habitat Surrounding the Plant Site and Quarry Site During Mining Operations **(less than significant)**
- Impact 4.4-3: Have An Adverse Effect, Directly or Indirectly, on Special-Status Plant or Wildlife Species on the Plant Site or Quarry Site After the Completion of Mining and Reclamation **(less than significant)**
- Impact 4.4-4: Have A Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.3-2, "Fugitive Dust Control Plan"
  - Mitigation Measure 4.13-6, "Blasting Protocols"
- Impact 4.4-5: Have An Adverse Effect on Protected Wetlands or Waters of The State (**less than significant**)
- Impact 4.4-6: Interfere With Native Resident or Migratory Fish or Wildlife Species Movement, Corridors, Or Nursery Sites (**less than significant**)
- Impact 4.4-7: Conflict With Local Policies or Ordinances Protecting Biological Resources (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.4-1a, "Burrowing Owl"
  - Mitigation Measure 4.4-1b, "Western Pond Turtle and Western Spadefoot"
  - Mitigation Measure 4.4-1c, "Nesting Birds"
  - Mitigation Measure 4.3-2, "Fugitive Dust Control Plan"
  - Mitigation Measure 4.13-6, "Blasting Protocols"

The geographic scope of the cumulative analysis for biological resources includes the area encompassing the project sites and the cumulative projects shown in Figure 5-1. Based on the cumulative project's proximity to the project sites, San Joaquin River, and Millerton reservoir, the analysis assumes there are biological resources impacts in the cumulative projects area that could be similar to those on the project sites, and therefore could be subject to cumulative impacts.

The project-specific impacts to special-status species (Impacts 4.4-1, 4.4-2, and 4.4-3) in conjunction with those from other past, present, and reasonably foreseeable future cumulative projects have the potential to result in significant cumulative impacts to burrowing owl, western pond turtle, western spadefoot, and nesting birds through the direct and indirect disturbance of the species and their habitats. This is a potentially significant cumulative impact. However, the implementation of Mitigation Measures 4.4-1a, -1b, and -1c would effectively avoid or substantially reduce the proposed project's

impacts to these species by requiring preconstruction surveys and avoidance measures. Thus, the proposed project's contribution to cumulative impacts to special-status species, after mitigation, would be less than cumulatively considerable.

With regard to potential impacts to riparian communities, waters of the state, wetlands, or other sensitive natural communities, such as groundwater dependent ecosystems (Impacts 4.4-4 and 4.4-5), the nearest cumulative projects to the Plant Site and Quarry Site are Friant Ranch Specific Plan (Project No. 1 in Figure 5-1 and Table 5-1), Tesoro Viejo (Project No. 4), Paseo Pacifico (Project No. 10), and Copper River Ranch (Project No. 12). These projects are all large scale residential and commercials development projects that have, or would be required to have, water supply evaluations and the management of the appropriate sources of water by a water district. The Tesoro Viejo and Paseo Pacifico projects are located in Madera County, west of the San Joaquin River. Development of the Tesoro Viejo project, located approximately ½-miles west of the Quarry Site, is already underway and the development uses surface water supplies managed by the California Water Service (California Water Service 2022). Because Tesoro Viejo uses surface water supplies, the development does not have the potential to drawdown groundwater and therefore would not have the potential to impact riparian communities, waters of the state, wetlands, or groundwater dependent ecosystems near the project sites. Madera County has not yet completed the environmental review of the Paseo Pacifico project, but the easternmost portion of the Paseo Pacifico project area is located approximately 1.5 miles from the Plant Site and is separated from the site by the San Joaquin River. Based on this distance and the presence of the San Joaquin River, there would be limited potential for cumulative effects on groundwater levels near the Plant Site such that impacts to riparian communities, waters of the state, wetlands, or groundwater dependent ecosystems would occur.

The Friant Ranch Specific Plan project, located approximately ½-mile northeast of the Quarry Site, proposes to use water from the Millerton Reservoir, Friant-Kern Canal, and Tule River (Provost & Pritchard Consulting Group 2022). Water would be from existing water entitlements to the Lower Tule River Irrigation District and Fresno County Water Works District No. 18. The proposed project would not affect water from Millerton Reservoir, Friant-Kern Canal, and Tule River; therefore, there would not be potential cumulative impacts of the proposed project and the Friant Ranch Specific Plan project on riparian communities, waters of the state, wetlands, or groundwater dependent ecosystems in the vicinity of the project sites.

Lastly, the development of the Copper River Ranch project is already underway, and this project is served by the City of Fresno Water Division, which operates 265 wells across the City's service area (City of Fresno Water Division 2021). As shown in Table 4.10-8,

"Estimated Drawdown of Groundwater Levels in Wells Near the Plant Site," and Table 4.10-9, "Estimated Drawdown of Groundwater Levels in Wells Near the Quarry Site," of Section 4.10, "Hydrology and Water Quality," of this Draft EIR, the nearest wells to the project sites do not include wells that belong to the City of Fresno Water Division. The remaining cumulative projects listed in Table 5-1 and shown in Figure 5-1 are located several miles from both project sites and therefore do not have the potential to contribute to cumulative impacts to riparian communities, waters of the state, wetlands, or groundwater dependent ecosystems in the vicinity of the Plant Site and Quarry Site.

Based on the distance of the cumulative projects listed in Table 5-1 and shown in Figure 5-1 from the San Joaquin River and the project sites, and based on their proposed residential/commercial land uses that do not entail the disturbance of the river, there would not be a potential for the cumulative projects to affect riverbank stability or to generate substantial fugitive dust, therefore, there is no potential for a cumulative impact to riparian communities, waters of the state, wetlands, or groundwater dependent ecosystems near the Plant Site and Quarry Site as a result of cumulative effects of river bank stability or dust. For these reasons, the potential for cumulative impacts on riparian communities, waters of the state, wetlands, or groundwater dependent ecosystems to occur as a result of the proposed project and cumulative projects would be less than significant.

The San Joaquin River corridor is considered a significant wildlife movement corridor that provides natural areas for wildlife to move through the region in search of food, shelter, or nesting habitat. Neither the proposed project nor cumulative project propose any direct disturbance of the San Joaquin River corridor. Based on the distances of the cumulative projects from the San Joaquin River and the potential cumulative impacts of these projects on the San Joaquin River, these projects would not interfere with the use of the San Joaquin River as a corridor. Similarly, the potential of the proposed project to interfere with the use of the San Joaquin River as a wildlife corridor would be less than significant (Impact 4.4-6). Therefore, the potential cumulative impact to wildlife corridors would be less than significant.

The implementation of the mitigation measures presented in Section 4.4 would eliminate potential project conflicts with local policies and ordinances that protect biological resources (Impact 4.4-7). The cumulative projects would also be required to comply with local policies and ordinances and to mitigate potentially significant impacts to the extent feasible. Therefore, compliance with the existing County environmental review process would reduce the potential for significant cumulative impacts related to conflicts with local policies or ordinances protecting biological resources to less than significant.

5.3.5 Cultural Resources

Section 4.5, "Cultural Resources," identifies the following project impacts and mitigation measures:

- Impact 4.5-1: Substantial Adverse Change in the Significance of a Historical Resource Pursuant to CCR Section 15064.5 (**less than significant**)
- Impact 4.5-2: Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to CCR Section 15064.5 (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.5-2, "Inadvertent Discovery of Archaeological Resources"
- Impact 4.5-3: Disturb Human Remains, Including Those Interred Outside of Formal Cemeteries (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.5-3, "Inadvertent Discovery of Unmarked Burials"

The geographic scope of the cumulative analysis for cultural resources is Fresno County. Past and ongoing development has likely resulted in the cumulative loss and degradation of historic and archaeological resources in Fresno County. As described in Impacts 4.5-2 and 4.5-3, with implementation of mitigation measures provided, the project would have less than significant impacts on cultural resources. Mitigation Measures 4.5-2, "Inadvertent Discovery of Archaeological Resources" and 4.5-3, "Inadvertent Discovery of Unmarked Burials" would ensure that project activities avoid or minimize adverse effects on any historic or archaeological resources inadvertently discovered on the project sites. As such, the project's contribution to the cumulative loss of cultural resources would be less than cumulatively considerable and is less than significant.

5.3.6 Energy

Section 4.6, "Energy," identifies the following project impacts and mitigation measures:

- Impact 4.6-1: Result in a Potentially Significant Environmental Impact Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.3-2, "Fugitive Dust Control Plan"
  - Mitigation Measure 4.8-1, "Asphalt Plant Performance Standards"
- Impact 4.6-2: Conflict With or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency (**less than significant**)

The geographic scope of the cumulative analysis for energy is the state of California. Development throughout the state, including the proposed project, would be required to

comply with statewide mandatory energy requirements outlined in Title 24, Part 6, of the California Code of Regulation (the CALGreen Code), which is intended to decrease electricity and natural gas consumption in new and retrofitted structures. Commercial truck fleets and passenger cars used by workers would be required to meet statewide fuel efficiency standards which would gradually over time increase fuel efficiency and reduce fuel use throughout the state. Enforcement of these existing regulations would reduce the cumulative impact to a less than significant level. Further, the project involves operational changes and the installation of new technologies that would reduce energy consumption on the project sites. Once the project sites are reclaimed as open space, the associated energy use would be negligible. For these reasons, the project's contribution to cumulative energy consumption would be less than cumulatively considerable and less than significant.

5.3.7 Geology and Soils

Section 4.7, "Geology and Soils," identifies the following project impacts and mitigation measures:

- Impact 4.7-1: Exposure of People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death, as a Result of Rupture of a Known Fault (**no impact**)
- Impact 4.7-2: Exposure of People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death, as a Result of Strong Seismic Ground Shaking or as a Result of Seismically Induced Liquefaction, Lateral Spreading, or Settlement (**less than significant**)
- Impact 4.7-3: Exposure of People or Structures to Potential Substantial Adverse Effects as Result of Landslides (**less than significant**)
- Impact 4.7-4: Result in Substantial Soil Erosion (**less than significant**)
- Impact 4.7-5: Result in the Substantial Loss of Topsoil (**less than significant**)
- Impact 4.7-6: Result in Slope Instability at the Plant Site (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.7-6, "Plant Site Slope Stability Monitoring"
- Impact 4.7-7: Result in Slope Instability at the Quarry Site (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.7-7a, "Quarry Site Slope Stability Monitoring"
  - Mitigation Measure 4.7-7b, "Quarry Site Kinematic Analyses''
  - Mitigation Measure 4.7-7c, "Quarry Site Groundwater Conditions"

- Impact 4.7-8: Be Located on Expansive Soil, as Defined in Table 18-1-B of the Uniform Building Code (1994), Creating Substantial Risks to Life or Property (**less than significant**)
- Impact 4.7-9: Have Soils Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Wastewater Disposal Systems Where Sewers Are Not Available for the Disposal of Wastewater (**less than significant**)
- Impact 4.7-10: Directly or Indirectly Destroy a Unique Geological Feature (**no impact**)
- Impact 4.7-11: Directly or Indirectly Destroy a Unique Paleontological Resource (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.7-11, "Paleontological Resources"

Potential effects to geologic and soil conditions are typically considered site specific. Therefore, the geographic scope of the cumulative analysis for geology and soils is limited to the project sites and adjacent properties. The scope of potential cumulative impacts is limited to the area that is physically affected by the project. Because of the limited extent of the cumulative setting for this resource topic, none of the projects listed in Table 5-1 would be relevant to this analysis, as none of the listed projects are on or adjacent the project sites. Thus, there would be no cumulative geologic, soils, or paleontological resource impacts and are less than significant.

5.3.8 Greenhouse Gas Emissions

Section 4.8, "Greenhouse Gas Emissions," identifies the following project impacts and mitigation measures:

- Impact 4.8-1: Generate GHG Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.8-1, "Asphalt Plant Performance Standards"
- Impact 4.8-2: Consistency With Applicable GHG Plans, Policies, or Regulations (**less than significant**)

Greenhouse gas analysis is inherently a cumulative issue as it relies on statewide policy guidance. The State of California, through AB 32, has acknowledged that GHG emissions are a statewide impact. Therefore, the geographic scope of the cumulative analysis of greenhouse gas emissions is the state of California.

Similar to the proposed project (see Impact 4.8-1), development throughout the state relies on electricity and transportation fuels that are subject to the Cap-and-Trade

Program administered by CARB, which is designed to reduce GHG emissions as needed to achieve the state's emissions reduction targets. Cumulative emissions from other sources not subject to the Cap-and-Trade Program are regulated at the local air district level through the enforcement of district rules and implementation of best performance standards. These existing regulations would ensure that new development does not result in a cumulatively significant increase in GHG emissions which would interfere with the state's GHG reduction goals. Furthermore, as discussed in Impacts 4.8-1 and 4.8-2, the project's GHG emissions that are not subject to the Cap-and-Trade Program would not exceed the SCAQMD's screening threshold and the project would be consistent with applicable GHG reduction plans, policies, and programs. Therefore, the project's contribution to cumulative GHG emissions and the associated effects of global climate change would be less than cumulatively considerable and are less than significant.

5.3.9 Hazards and Hazardous Materials

Section 4.9, "Hazards and Hazardous Materials," identifies the following project impacts and mitigation measures:

- Impact 4.9-1: Create a Significant Hazard to the Public or the Environment Through the Routine Transport, Use, or Disposal of Hazardous Materials or Through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment During Construction, Relocation, and/or Demolition Activities (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.9-1, "Survey for PCB-Containing Building Materials"
- Impact 4.9-2: Create a Significant Hazard to the Public or the Environment Through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials Transported, Used, or Disposed of During Mining or Final Reclamation (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.13-6, "Blasting Protocols"
- Impact 4.9-3: Create a Significant Hazard to the Public or the Environment Through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials Transported, Used, or Disposed of Post-Reclamation (**less than significant**)
- Impact 4.9-4: Create a Significant Hazard to the Public or the Environment Through Flyrock Generated by the Use of Blasting Agents on the Quarry Site (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.13-6, "Blasting Protocols"

- Impact 4.9-5: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan (**less than significant**)
- Impact 4.9-6: Expose People or Structures, Either Directly or Indirectly, to a Significant Risk of Loss, Injury or Death Involving Wildland Fires (**less than significant**)

The geographic scope for hazards and hazardous materials generally consists of the area that could be affected by proposed project activities, such as the release of hazardous materials, as well as by other projects whose activities could directly or indirectly affect hazardous materials on the project site. Typically, only projects adjacent to or abutting a project site are considered because of the limited potential impact area associated with the release of hazardous materials into the environment. As shown on Figure 5-1, the Friant Ranch Specific Plan is planned approximately 0.5 miles north of the Quarry Site but would not abut the project sites. None of the other projects listed in Table 5-1 are planned for development adjacent to the project sites.

Compliance with applicable federal, state, and local regulations related to public health and safety and hazardous materials would ensure that individual and cumulative impacts from the Friant Ranch Specific Plan and any other projects developed in the vicinity of the project sites would be less than significant. Any such projects would require assessments for existing hazardous materials contamination from past uses and/or releases. Cleanup of hazardous materials in soil, soil vapor, and/or groundwater to regulatory cleanup levels would be required prior to development in compliance with applicable regulations, as listed in Section 4.9. Uses that include the storage or use of large quantities of hazardous materials would be required to prepare a Hazardous Materials Business Plan and would be subject to oversight by Fresno County. Therefore, cumulative impacts associated with the use, storage, transport, and disposal of hazardous materials associated with cumulative development in the project vicinity would be less than significant. Furthermore, as determined in Section 4.9, the project's contribution to cumulative hazardous materials impacts would be less than cumulatively considerable and are less than significant.

5.3.10 Hydrology and Water Quality

Section 4.10, "Hydrology and Water Quality," identifies the following project impacts and mitigation measures:

- Impact 4.10-1: Violate Surface Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality at the Plant Site or Quarry Site During Mining and Reclamation (**less than significant with mitigation incorporated**)

  - Mitigation Measure 4.13-6, "Blasting Protocols"
- Impact 4.10-2: Violate Surface Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality at the Plant Site after the Completion of Mining and Reclamation (**less than significant**)
- Impact 4.10-3: Violate Surface Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality at the Quarry Site after the Completion of Mining and Reclamation (**less than significant**)
- Impact 4.10-4: Violate Groundwater Quality Standards or Otherwise Substantially Degrade Groundwater Quality at the Plant Site Due to Activities Conducted During Mining and Reclamation (**less than significant**)
- Impact 4.10-5: Violate Groundwater Quality Standards or Otherwise Substantially Degrade Groundwater Quality at the Plant Site due to the Ponding of Water in the Excavation (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.10-5a, "Plant Site Pond Adaptive Management Program"
  - Mitigation Measure 4.10-5b, "Plant Site Pond Adaptive Management Program Funding Mechanism"
- Impact 4.10-6: Violate Groundwater Quality Standards or Otherwise Substantially Degrade Groundwater Quality at the Quarry Site During Mining and Reclamation (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.13-6, "Blasting Protocols"
- Impact 4.10-7: Violate Groundwater Quality Standards or Otherwise Substantially Degrade Groundwater Quality at the Quarry Site due to the Ponding of Water in the Excavation (**less than significant**)
- Impact 4.10-8: Substantially Decrease Groundwater Supplies During Mining Operations and After the Completion of Reclamation at the Plant Site such that the Project Could Interfere with Existing Groundwater Supply Wells (**less than significant**)
- Impact 4.10-9: Substantially Decrease Groundwater Supplies During Mining Operations and After the Completion of Reclamation at the Plant Site such that the Project May Impede Sustainable Groundwater Management of the Basin (**less than significant**)
- Impact 4.10-10: Substantially Decrease Groundwater Supplies During Mining Operations and After the Completion of Reclamation at the Quarry Site such that the Project Could Interfere with Existing Groundwater Supply Wells (**less than significant with mitigation incorporated**)

  - Mitigation Measure 4.10-10a, "Quarry Site Groundwater Adaptive Management Program"
  - Mitigation Measure 4.10-10b, "Quarry Site Groundwater Adaptive Management Program Funding Mechanism"
- Impact 4.10-11: Substantially Decrease Groundwater Supplies During Mining Operations and After the Completion of Reclamation at the Quarry Site such that the Project May Impede Sustainable Groundwater Management of the Basin (**less than significant**)
- Impact 4.10-12: Substantially Decrease Groundwater Levels in a Manner that Would Result in the Flow of Substantial Volumes of Water from the San Joaquin River to the Quarry Site (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.10-10a, "Quarry Site Groundwater Adaptive Management Program"
  - Mitigation Measure 4.10-10b, "Quarry Site Groundwater Adaptive Management Program Funding Mechanism"
- Impact 4.10-13: Interfere Substantially with Groundwater Recharge at the Plant Site and Quarry Site such that the Project May Impede Sustainable Groundwater Management of the Basin (**less than significant**)
- Impact 4.10-14: Alter Drainage Patterns in a manner which would result in Substantial Erosion or Siltation on or Off Site (**less than significant**)
- Impact 4.10-15: Alter Drainage Patterns in a manner which would result in On or Off-Site Flooding or Exceed the Capacity of the Existing Storm Drainage System (**less than significant**)
- Impact 4.10-16: Alter Drainage Patterns in a Manner Which Would Impede or Redirect Flood Flows (**less than significant**)
- Impact 4.10-17: Release of Pollutants in Flood Hazard, Tsunami, or Seiche Zones Due to Project Inundation (**less than significant**)

Cumulative water quality and drainage impacts are assessed both at a local level and a broader watershed/groundwater aquifer level. The local-scale cumulative setting is important for assessing some impacts, but because of the nature of water resources, most environmental impacts extend beyond a local level and have the potential to affect a large geographic area. The geographic scope of this analysis generally considers the area encompassing the project sites and the cumulative projects listed in Table 5-1 and shown in Figure 5-1, which are those projects in Fresno County, Madera County, and the City of Fresno that are closest to the project site, San Joaquin River, and/or Millerton Lake.

However, cumulative hydrologic and water quality impacts to the San Joaquin River downstream of Friant Dam and the to the Kings Subbasin are considered, as appropriate.

Regarding cumulative impacts to surface water quality (Impacts 4.10-1, 4.10-2, and 4.10-3), stormwater runoff is contained within the project sites by the existing berms, and the project would not impact surface water quality outside of the project sites. Consequently, there is no potential for cumulative surface water quality impacts to occur. Similarly, the proposed project would not alter drainage patterns outside of the project sites (Impact 4.10-14, 4.10-15, and 4.10-16). Therefore, there are no potential cumulative impacts related to erosion, siltation, and flooding that would occur because of changes in drainage patterns.

Cumulative impacts to groundwater quality could occur if the proposed project, when considered with cumulative projects, could result in the degradation of groundwater quality in the groundwater aquifer through, for example, changing groundwater conditions in a manner that results in the mobilization of potential pollutants or through the release of hazardous materials that then percolate into the groundwater (Impacts 4.10-4, 4.10-5, 4.10-6, and 4.10-7). The cumulative projects considered in this analysis (shown in Figure 5-1) consist of residential and/or commercial land uses that do not include activities that would alter groundwater conditions to an extent that potential pollutants would be mobilized or that would have the potential to result in the release a substantial quantity of hazardous materials into the groundwater. Based on the types and quantities of materials typically used by residential and commercial developments, any releases of hazardous materials from these land uses would be relatively minor in quantity and would not have the potential to spread beyond relatively short distances. For these reasons, potential cumulative impacts to groundwater quality would be less than significant.

The proposed project would require the pumping of groundwater from the quarry pits at the Plant Site and Quarry Site during mining operations. After the completion of mining, the reclamation of the project sites would result in the formation of quarry pit lakes on both sites, which would lead to the consumption of groundwater through evapotranspiration (Impacts 4.10-8, 4.10-9, 4.10-10, and 4.10-11). Some of the cumulative projects within the Kings Subbasin will require an increase in the pumping of groundwater. As described in Section 4.10, groundwater within the Kings Subbasin is managed in accordance with the Sustainable Groundwater Management Act (SGMA). Under the SGMA, the Kings Subbasin is designated a critically over drafted, high priority groundwater basin under the SGMA. The Kings Subbasin has seven Groundwater Sustainability Agencies (GSAs) responsible for meeting the SGMA requirement that medium- and high- priority basins halt groundwater overdraft and bring groundwater

basins into balanced levels of pumping and recharge. Therefore, there is an existing significant cumulative impact to the Kings Subbasin where the proposed project is located. The use of groundwater by the proposed project and cumulative projects in a critically over-drafted groundwater basin could also lead to conflict or obstruction of the North Kings GSA Groundwater Sustainability Plan, which is a potentially significant cumulative impact (North Kings GSA 2022) (Impact 4.10-18). The project sites are located within the jurisdiction of the North Kings GSA, which experiences a positive water balance during normal and wet year conditions (Table 3-10 in North Kings GSA 2022). The use of groundwater recharge trenches at the Plant Site and Quarry Site would minimize the consumption of groundwater at the proposed project sites. Furthermore, as described in Impacts 4.10-10 and 4.10-11, during both mining operations and after final reclamation, the estimated increase in groundwater consumption at the Plant Site and Quarry Site are several orders of magnitude smaller than the fluctuations in the water balance of the North Kings GSA area. For these reasons, the project's contribution to the significant cumulative impacts related to the depletion of groundwater and conflict/obstruction with the North Kings GSA Groundwater Sustainability Plan would be less than cumulatively considerable.

The proposed project and cumulative projects could have a significant impact on the hydrology of the San Joaquin River should the projects substantially drawdown groundwater and thereby result in a decrease of flows in the river (Impact 4.10-12). As described above in Section 5.3.4, based on (1) the distances of the cumulative projects from the project sites and San Joaquin River, (2) the residential/commercial land uses proposed, and (3) the management of water supplies to these projects by water districts, the cumulative projects do not have the potential to result in a drawdown of groundwater levels such that there is a decrease in the volumes of water in the San Joaquin River. The use of recharge trenches on the Quarry Site, and the limited hydraulic connectivity between the San Joaquin River and the hard rock underlying the Quarry Site, limit the potential of the proposed project to decrease the volumes of water in the San Joaquin River. Consequently, the potential cumulative impact of groundwater consumption by the proposed project and cumulative projects on the San Joaquin River would be less than significant.

Cumulative development within the Kings Subbasin will increase impervious surfaces within the basin, and thereby have the potential to interfere with groundwater recharge in a manner that may impede the sustainable management of the groundwater basin (Impact 4.10-13). The is a potentially significant cumulative impact. As discussed in Impact 4.10-13, the proposed project would not increase impervious surfaces at the Plant Site. Although 42-acres of impervious surfaces would be added to the Quarry Site, the primary sources of groundwater recharge at the Quarry Site are the Northeast Pond and

groundwater recharge trenches. The project would maintain the Northeast Pond and existing recharge trenches and would develop additional trenches. Upon completion of reclamation, impervious surfaces would be removed from the Plant Site and Quarry Site. For these reasons, the project's contribution to the potentially significant cumulative interference with groundwater recharge would be less than cumulatively considerable.

The Quarry Site is not located in a flood plain, and only a small portion of the northwest corner of the Plant Site (as shown in Figure 4.10-1, "Current and Regulatory Floodways and Floodplains,") is located within the Little Dry Creek floodplain. None of the cumulative projects listed in Table 5-1 and shown in Figure 5-1 are located in the San Joaquin River or Little Dry Creek floodplains. Consequently, the potential cumulative impact due to the release of pollutants as a result of inundation of the proposed project sites and cumulative projects sites would be less than significant.

As described in Impact 4.10-18, the Basin Plan is the master policy document that establishes the water quality objectives and strategies needed to protect designated beneficial water uses in the Central Valley region. The SWRCB and Central Valley RWQCB enforce compliance with the water quality objectives of the Basin Plan through the issuance of NPDES permits. There are no land uses or activities proposed by the project or cumulative projects that would prevent compliance with the requirements of the NPDES program. Therefore, the cumulative potential of the proposed project and cumulative projects to conflict with or obstruct the Basin Plan would be less than significant.

5.3.11 Land Use and Planning

Section 4.11, "Land Use and Planning," identifies the following project impacts:

- Impact 4.11-1: Physically Divide an Established Community (**no impact**)
- Impact 4.11-2: Conflict With Land Use Plans, Policies, and Regulations (**less than significant**)

Land use and planning are inherently local and community-level issues regulated primarily by local governments. The project sites are in Fresno County adjacent to the Madera County line and just north of the City of Fresno. For these reasons, the geographic scope of the cumulative analysis of land use and planning impacts is limited to those portions of Fresno and Madera counties and the City of Fresno in the vicinity of the project sites.

As discussed in Impact 4.11-1, the project is on currently existing sites and the footprints would not change and does not involve the construction of any barriers to mobility in the

nearby community. Further, with implementation of the mitigation measures provided throughout this Draft EIR, the project would be consistent with all applicable land use plans, policies, and regulations (Impact 4.11-2). Therefore, the project's contribution to cumulative land use impacts in the county would be less than cumulatively considerable and are less than significant.

5.3.12 Mineral Resources

Section 4.12, "Mineral Resources," identifies the following project impact:

- Impact 4.12-1: Loss of Availability of a Known Mineral Resource or Locally Important Mineral Resource Recovery Site Delineated on a Local General Plan, Specific Plan or Other Land Use Plan (**less than significant**)

The geographic scope of the cumulative analysis for mineral resources is Fresno County. According to the Fresno County General Plan (2024), there is an abundant and wide variety of minerals present in the county, with aggregate and petroleum being the most significant. The County has adopted policies intended to preserve the future availability of these mineral resources including prohibiting incompatible uses near existing or potential surface mining areas. As discussed in Impact 4.12-1, the proposed project would allow for the recovery and beneficial use of a known and locally important and designated mineral resource. Further, upon completion of the proposed mining activities, the project sites would be reclaimed as open space which would not preclude further mineral exploration and extraction in the future. Therefore, the project's contribution to this cumulative impact would be less than cumulatively considerable and less than significant.

5.3.13 Noise

Section 4.13, "Noise," identifies the following project impacts and mitigation measures:

- Impact 4.13-1: Generate a Substantial Temporary or Permanent Increase in Ambient Noise Levels from Project-Generated Traffic in Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies (**less than significant**).
- Impact 4.13-2: Generate a Substantial Temporary or Permanent Increase in Ambient Noise Levels from Plant Site Stage 1 Operations in Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies (**less than significant with mitigation incorporated**).
  - Mitigation Measure 4.13-2, "Plant Site Noise Reduction"

- Impact 4.13-3: Generate a Substantial Temporary or Permanent Increase in Ambient Noise Levels from Quarry Site Stage 1 and 2 Operations and Final Reclamation in Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies (**less than significant with mitigation incorporated**).
  - Mitigation Measure 4.13-3, "Quarry Site Noise Reduction"
- Impact 4.13-4: Generate a Substantial Temporary or Permanent Increase in Ambient Noise Levels from Plant Site and Quarry Site Final Reclamation Activities and Post-Reclamation in Excess of Standards Established in the Local General Plan or Noise Ordinance, or Applicable Standards of Other Agencies (**less than significant**).
- Impact 4.13-5: Generate Substantial Groundborne Vibration or Groundborne Noise from Mining Operations and Reclamation Activities (Excluding Blasting) (**less than significant**).
- Impact 4.13-6: Generate Substantial Groundborne Vibration or Airborne Vibration As a result of Blasting (**less than significant with mitigation incorporated**).
  - Mitigation Measure 4.13-6, "Blasting Protocols"

The geographic scope for cumulative stationary noise impacts is generally limited to projects adjacent or in close proximity to the project sites from which project noise could be audible and which could generate noise that in combination with project noise could exceed applicable noise standards. As shown on Figure 5-1, the only foreseeable project in close proximity to the project sites is the Friant Ranch Specific Plan. The specific plan boundary is approximately 0.5 miles and across North Friant Road from the Quarry Site. Furthermore, the southwestern corner of the Friant Ranch Specific Plan area (closest to the Quarry Site) is designated as Open Space which would not allow for the development of any significant noise-generating uses or uses which could be a sensitive receptor to project noise. Thus, cumulative stationary noise impacts would be less than significant.

The geographic scope for cumulative traffic noise impacts is determined by the traffic study area and the distribution of project-generated traffic. The project's cumulative traffic noise impacts for the 5-year, 15-year, and 40-year scenarios are evaluated as described in Section 4.13.4.3, "Analysis Methodology," and under Impact 4.13-2. This impact concluded that the project's predicted traffic noise level increases would not contribute significantly to cumulative noise levels in the future. Thus, the project's contribution to cumulative traffic noise impacts in the study area would be less than cumulatively considerable and less than significant.

5.3.14 Population and Housing

Section 4.14, "Population and Housing," identifies the following impacts:

- Impact 4.14-1: Induce Substantial Unplanned Population Growth in an Area, Either Directly or Indirectly (**less than significant**)
- Impact 4.14-2: Displace Substantial Numbers of Existing People or Housing, Necessitating the Construction of Replacement Housing Elsewhere (**no impact**)

The geographic scope of the cumulative analysis for population and housing is Fresno County. As of January 1, 2021, the County population was 1,026,681, a 0.6% increase over the previous year. The County's estimated 2023 population is 1,032,144, a 0.53% increase over the 2021 population. This projected cumulative growth could lead to a variety of environmental effects related to the construction and habitation of new housing and commercial space, increased demand for public services and utilities, and increased vehicle miles traveled within the county.

As discussed in Impact 4.14-1, the project would create five new jobs at the project sites which would likely be filled from the existing county workforce. Thus, the project's contribution to cumulative population growth in the county would be less than cumulatively considerable and less than significant.

5.3.15 Public Services

Section 4.15, "Public Services," identifies the following impact:

- Impact 4.15-1: Result in Substantial Adverse Physical Impacts Associated With the Provision of New or Physically Altered Governmental Facilities, Need For New or Physically Altered Governmental Facilities, the Construction of Which Could Cause Significant Environmental Impacts, in Order to Maintain Acceptable Service Ratios, Response Times or Other Performance Objectives For Any of The Public Services: Fire Protection, Law Enforcement, Schools, Parks, Other Public Facilities (**less than significant**)

The geographic scope of the cumulative impact analysis for public services is Fresno County. Cumulative development within the county gradually increases calls for emergency services, public school enrollments, and the use of public facilities such as parks and libraries, eventually requiring the construction of new or expanded facilities and staffing. Most development projects are required to pay developer impact fees to help fund construction of new facilities as they are needed. The environmental effects of these construction projects are evaluated under CEQA prior to construction.

As discussed in Section 4.15, the proposed project would not result in substantial unplanned growth in the county. The project would add five jobs to the existing operations, which are likely to be filled by the county's existing workforce. As the project would not add new county residents, it would not increase demand for existing neighborhood and regional parks or other recreational facilities. Thus, the project's contribution to this cumulative impact would be less than cumulatively considerable and less than significant.

5.3.16 Recreation

Section 4.16, "Recreation," identifies the following impact:

- Impact 4.16-1: Increase use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated (**less than significant**)
- Impact 4.16-2: Inclusion of recreational facilities or requiring the construction or expansion of recreational facilities which might have an adverse physical effect on the environment (**less than significant**)

The geographic scope of the cumulative impact analysis for recreation is Fresno County. Cumulative development within the county gradually increases demand for parks and recreational facilities requiring increased maintenance and construction of new and expanded facilities. The environmental effects of these construction projects are evaluated under CEQA prior to construction.

As discussed in Section 4.16, the proposed project would not result in substantial unplanned growth in the county. The project would add five jobs to the existing operations, which are likely to be filled from the county's existing workforce. As the project would not add new county residents, it would not increase demand for public services or use of public facilities. Thus, the project's contribution to this cumulative impact would be less than cumulatively considerable and less than significant.

5.3.17 Transportation

Section 4.17, "Transportation," identifies the following impacts:

- Impact 4.17-1: Conflict With a Program, Plan, Ordinance, or Policy Addressing the Circulation System, including Transit, Roadway, Bicycle, and Pedestrian Facilities (**significant and unavoidable with mitigation incorporated**)
  - Mitigation Measure 4.17-1a, "Equitable Share Contributions—Friant Road and Willow Avenue (Existing Plus Project)"

- Mitigation Measure 4.17-1b, "Equitable Share Contributions—Pavement Conditions"
- Mitigation Measure 4.17-1c, "Equitable Share Contributions—Friant Road and Willow Avenue (5-Year Cumulative)"
- Mitigation Measure 4.17-1d, "Equitable Share Contributions—Copper Avenue and Willow Avenue (5-Year Cumulative)"
- Mitigation Measure 4.17-1e, "Equitable Share Contributions—SR 41 and Road 145 (15-Year Cumulative)"
- Mitigation Measure 4.17-1f, "Equitable Share Contributions—Road 206 and Road 145 Intersection (15-Year Cumulative)"
- Mitigation Measure 4.17-1g, "Equitable Share Contributions—Friant Road and North Fork Road Intersection (15-Year Cumulative)"
- Mitigation Measure 4.17-1h, "Equitable Share Contributions—Friant Road and Quarry Site Access Intersection (15-Year Cumulative)"
- Mitigation Measure 4.17-1i, "Equitable Share Contributions—Friant Road and Plant Site Access Intersection (Year 2040 Cumulative)"
- Mitigation Measure 4.17-1j, "Equitable Share Contributions—Friant Road and Willow Avenue (Year 2040 Cumulative)"
- Mitigation Measure 4.17-1k, "Equitable Share Contributions—Copper Avenue and Willow Avenue (15-Year Cumulative)"
- Mitigation Measure 4.17-1l, "Equitable Share Contributions—SR 41 and Road 145 (Year 2040 Cumulative)"
- Mitigation Measure 4.17-1m, "Equitable Share Contributions—Road 206 and Road 145 (Year 2040 Cumulative)"
- Mitigation Measure 4.17-1n, "Equitable Share Contributions—Friant Road and North Fork Road Intersect (Year 2040 Cumulative)"
- Mitigation Measure 4.17-1o, "Equitable Share Contributions—Friant Road and Quarry Site (Year 2040 Cumulative)"
- Mitigation Measure 4.17-1p, "Equitable Share Contributions—Friant Road and Plant Site (Year 2040 Cumulative)"
- Mitigation Measure 4.17-1q, "Equitable Share Contributions—Friant Road and Willow Avenue (Year 2040 Cumulative)"
- Mitigation Measure 4.17-1r, "Equitable Share Contributions—Copper Avenue and Willow Avenue (Year 2040 Cumulative)"

- Impact 4.17-2: Conflict With or be Inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) (**less than significant**)

- Impact 4.17-3: Substantially Increase Hazards Due to a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., farm equipment) (**less than significant**)
- Impact 4.17-4: Result in Inadequate Emergency Access (**less than significant**)

The geographic scope of the cumulative analysis of transportation is the study area defined in the Traffic Impact Study prepared for the proposed project (Peters Engineering Group 2019; see Appendix I-1). The pending projects identified in the TIS are included within larger projects which are listed in Table 5-1.

The project does not involve any changes to roadways or the existing bicycle paths or lanes in the project area and would not contribute significantly to cumulative conflicts with alternative transportation plans and programs (Impact 4.17-1). The project would increase automobile trips between approximately 6 and 10 trips per day during Stage 1 and Stage 2 operations. This is below the 110 trips per day threshold indicating that the project's contribution to cumulative VMT in the county would be less than cumulatively considerable and would not be inconsistent with CEQA Guidelines Section 15064.3 (Impact 4.17-2). As discussed in Section 4.17.3.2, "Analysis Methodology," LOS and Queuing Analysis, under cumulative (year 2040) conditions, project traffic would contribute to substantial decreases in LOS and a substantial increase in queuing at some intersections. However, implementation of Mitigation Measures 4.17-1a through 4.17-1r would reduce impacts on LOS and queuing. However, because it is uncertain when the assumed improvements would be constructed, the project's contribution to cumulative traffic congestion would be considered significant and unavoidable even after mitigation.

5.3.18 Tribal Cultural Resources

Section 4.18, "Tribal Cultural Resources," identifies the following impacts and mitigation measures:

- Impact 4.18-1: Substantial Adverse Change in the Significance of a Tribal Cultural Resource Listed or Eligible for Listing in the California Register of Historical Resources, or in a Local Register of Historical Resources as Defined in Public Resources Code Section 5020.1(K), or by the Lead Agency Pursuant to Criteria Set Forth in Public Resources Code Section 5024.1(c) (**less than significant with mitigation incorporated**)
  - Mitigation Measure 4.5-2, "Inadvertent Discovery of Archaeological Resources"
  - Mitigation Measure 4.5-3, "Inadvertent Discovery of Unmarked Burials"

The geographic scope of the cumulative analysis for tribal cultural resources is Fresno County. Past and ongoing development within Fresno County has likely resulted in the cumulative loss and degradation of tribal cultural resources. As described in Impact 4.18-1, with implementation of mitigation, the project would have a less than significant impact on tribal cultural resources. Mitigation Measures 4.5-2, "Inadvertent Discovery of Archaeological Resources" and 4.5-3, "Inadvertent Discovery of Unmarked Burials" would ensure that project activities avoid or minimize adverse effects on any tribal cultural resources inadvertently discovered on the project sites. As such, the project's contribution to the cumulative loss of tribal cultural resources would be less than cumulatively considerable and less than significant.

5.3.19 Utilities and Service Systems

Section 4.19, "Utilities and Service Systems," identifies the following impacts:

- Impact 4.19-1: Require or Result in the Relocation or Construction of New or Expanded Water, Wastewater Treatment or Storm Water Drainage, Electric Power, Natural Gas, or Telecommunications Facilities, the Construction or Relocation of Which Could Cause Significant Environmental Effects (**no impact**).
- Impact 4.19-2: Not Have Sufficient Water Supplies Available to Serve the Project and Reasonably Foreseeable Future Development During Normal, Dry and Multiple Dry Years (**less than significant**).
- Impact 4.19-3: Generate Solid Waste in Excess of State or Local Standards, or in Excess of the Capacity of Local Infrastructure, Otherwise Impair the Attainment of Solid Waste Reduction Goals, or Conflict with Federal, State, and Local Management and Reduction Statutes and Regulations Related to Solid Waste (**less than significant**).

The geographic scope of the cumulative analysis for utilities and service systems is Fresno County. Development within the county has likely resulted in various environmental effects through the construction of new facilities and infrastructure to meet increased demand for water, sewer, drainage, power, telecommunications and solid waste services.

As discussed in Impact 4.19-1, the project would not require the construction or alteration of any offsite utilities and the construction of necessary onsite utilities would not, with mitigation, result in any significant environmental effects. As discussed in Impact 4.19-2, the project's water demand would vary by phase as equipment and operations are phased out or added and finally upon reclamation. As shown in Table 4.19-1, "Existing and Proposed Water Use Summary," surface diversions from the San Joaquin River would gradually decrease from existing levels whereas groundwater use would increase

primarily through evaporation of groundwater that accumulates in the excavations. Ultimately, the project would result in a net increase of water use of 255 acre-feet per year during the reclamation phase. The project's contribution to the cumulative increase in groundwater use in Fresno County would be cumulatively considerable. As discussed in Impact 4.19-3, the project would not significantly increase solid waste generation or demand for services and recycling of old concrete and asphalt material would continue at the project sites. Thus, the project's contribution to cumulative solid waste impacts would be less than cumulatively considerable and not significant.

5.3.20 Wildfire

Section 4.20, "Wildfire," identifies the following impacts and mitigation measure:

- Impact 4.20-1: Substantial Impairment of an Adopted Emergency Response Plan or Emergency Evacuation Plan (**less than significant**).
- Impact 4.20-2: Exacerbation of Wildfire Risks Due to Slope, Prevailing Winds, and Other Factors, Which Could Thereby Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire (**less than significant with mitigation incorporated**).
  - Mitigation Measure 4.13-6, "Blasting Protocols"
- Impact 4.20-3: Installation or Maintenance of Associated Infrastructure (Such as Roads, Fuel Breaks, Emergency Water Sources, Power Lines or Other Utilities) That May Exacerbate Fire Risk or That May Result in Temporary or Ongoing Impacts to the Environment (**less than significant**).
- Impact 4.20-4: Exposure of People or Structures to Significant Risks, Including Downslope or Downstream Flooding or Landslides, as a Result of Runoff, Post-Fire Slope Instability, or Drainage Changes **(less than significant).**

The geographic scope of the cumulative analysis of wildfire is Fresno County. Development within the rural areas of the County has likely resulted in a cumulative increase in wildfire hazard by allowing new development on slopes and along ridgelines where fire risk is heightened and by creating new slopes that could accelerate the spread of wildfire. As discussed in Impact 4.20-1, the proposed project would not adversely affect emergency response or evacuation in the County. Further, as described in Impact 4.20-2, while the project would create new slopes on both project sites because of proposed excavations, these slopes would be largely unvegetated during mining activities. Reclamation of the Plant Site would create open space land uses with the majority of the site converted to a water body from groundwater and rainfall and slopes above the water body revegetated with native vegetation. Therefore, there would be limited fuels on the Plant Site to exacerbate fire risk. Reclamation of the Quarry Site

would create an approximately 107-acre pond above the reclaimed bottom of the quarry pit from groundwater and rainfall. The majority of the slopes above the pond would be solid granite with almost no vegetation. Slopes above the granite would be seeded with native grasses and forbs and planted with native plants. Thus, the newly formed slopes would not exacerbate wildfire risks in the County. As discussed in Impact 4.20-3, all roads, infrastructure, and facilities proposed as part of the project would be constructed in unvegetated, highly disturbed areas and would not exacerbate fire risk. Finally, as discussed in Impact 4.20-4, because the project sites and adjacent properties are relatively flat and because, once reclaimed, the sites would be largely covered by lakes, the project would not expose downstream properties to excessive post-fire runoff or flooding. Implementation of Mitigation Measure 4.13-6 would minimize potential fire risks associated with the use of explosives onsite during blasting events. For these reasons, the project's contribution to countywide wildlife risk would be less than cumulatively considerable and less than significant.

5.3.21 Summary of Significant and Unavoidable Cumulative Impacts

As discussed in the preceding sections, the proposed project would not make cumulatively considerable contributions to any significant cumulative impacts except related to transportation. Impact 4.17-1 would remain a significant and unavoidable impact even with mitigation and would contribute significantly to cumulative transportation impacts in the region. See Section 5.3.17, above, for details.

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6—ALTERNATIVES

6.1 INTRODUCTION

This chapter describes a range of project alternatives and compares the associated potential environmental impacts to those of the proposed project, consisting of the Quarry Site and Plant Site (collectively project sites). The chapter includes a discussion of the CEQA requirements for an alternatives analysis and the methodology used for the selection of alternatives, with the intent of developing potentially feasible alternatives that avoid or substantially lessen the significant impacts identified for the proposed project while still meeting most of the basic project objectives. This chapter identifies a reasonable range of alternatives that meet the above criteria.

The alternatives are evaluated for their comparative merits with respect to minimizing adverse environmental effects. After identifying the alternatives, the chapter evaluates the alternatives' impacts compared to existing environmental conditions (referred to as the baseline conditions) and compared to the impacts of the proposed project. Based on this analysis, this chapter then identifies the environmentally superior alternative. Finally, it describes other alternative concepts that were considered but eliminated from detailed consideration and the reasons for their elimination.

The information in this section is based on the analyses provided and sources referenced in Chapter 4, "Environmental Analysis," of this Draft EIR, as well as an Applicant-prepared study and publicly available resources. The Applicant-prepared study used is:

- *Technical Memorandum: Comparison of Drawdowns Resulting from Project Alternatives Quarry Site Area Rockfield Modification Project*, EMKO Environmental, October 3, 2023 (Appendix K, "Comparison of Drawdowns Resulting from Project Alternatives")

The *Technical Memorandum: Comparison of Drawdowns Resulting from Project Alternatives Quarry Site Area Rockfield Modification Project* was originally prepared by EMKO Environmental in October 2023. The analysis was peer reviewed by County-retained Benchmark Resources in January 2024 and found to be adequate (see Appendix K).

6.2 CEQA REQUIREMENTS FOR ALTERNATIVES ANALYSIS

CEQA Guidelines, Section 15126.6(a), states that an environmental impact report (EIR) must describe and evaluate a reasonable range of alternatives to the project that would feasibly attain most of the project's basic objectives but would also avoid or substantially lessen any identified significant adverse environmental effects of the project. An EIR is

not required to consider every conceivable alternative to a proposed project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

CEQA Guidelines, Section 15364, defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." CEQA Guidelines Section 15126.6(f)(1), states that "the factors that may be taken into account when addressing the potential feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent)."

The EIR must evaluate the comparative merits of the alternatives and include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the existing and proposed project. Specifically, the CEQA Guidelines set forth the following criteria for selecting and evaluating alternatives:

- **Range of reasonable alternatives**. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. (CEQA Guidelines Section 15126.6[f]). An EIR is not required to consider alternatives "whose effect cannot be reasonably ascertained and whose *implementation is remote and speculative*" (CEQA Guidelines Section 15126.6(f)(3), emphasis added). The specific alternative of "no project" shall also be evaluated along with the project's impact (Section 15126.6[e][1]).
- **Ability to avoid or substantially reduce significant effects**. The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly (CEQA Guidelines Section 15126.6[b]).
- **Ability to meet project objectives**. The range of potential alternatives shall include those that could feasibly accomplish most of the basic objectives of the

project and could avoid or substantially lessen one or more of the significant effects (CEQA Guidelines Section 15126.6[c]).

- **Limitation of alternatives**. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making." (CEQA Guidelines Section 15126.6[f])

6.3 SUMMARY OF PROJECT OBJECTIVES AND IMPACTS

6.3.1 Project Objectives

The CEQA Guidelines provide that "the range of potential alternatives...shall include those that could feasibly accomplish most of the basic objectives of the project..." (CEQA Guidelines Section 15126.6(c)). The overall goal of the project is to continue and expand existing mining and processing operations at the Plant Site and Quarry Site and reclaim the two sites when mining operations are complete. As defined in Section 2.3, "Project Purpose and Objectives," of Chapter 2, "Project Description," of this Draft EIR, specific project objectives as revised since the October 2021 application submittal include:

1) Continue to provide a reliable and sustainable, local source of high-quality aggregate to help meet the current and long-term demand (100 years) for construction materials in the Fresno region;
2) Continue to utilize known aggregate reserves from existing partially mined properties, including those designated by the state and county as Mineral Resource Zone 2 (MRZ-2) (Mineral Resource Zone areas where adequate information indicates that significant mineral resources are present, i.e., sand and gravel);
3) Continue to utilize high quality aggregate resources that meet the California Department of Transportation's specifications for use in Portland Cement Concrete (PCC) and Asphaltic Concrete (AC) which aggregate is important for quality infrastructure growth and maintenance because of its versatility, value, and relative scarcity;
4) Maintain a local source of construction aggregate with enough annual sales capacity (3.0 million tons [MT]) to encourage a healthy competitive market;
5) Continue to provide aggregate resources with access to an efficient local road network;

6) Continue to provide an environmentally sound project that would balance the recovery of the aggregate resource with the protection of other resources including wildlife habitat, groundwater, surface water, and air quality;
7) Continue providing local quality jobs, while also benefiting local downstream businesses and creating an enhanced tax revenue to the county;
8) Maintain consistency with the San Joaquin River Parkway Master Plan;
9) Reclaim both project sites to open space wildlife habitat in a manner similar to the reclaimed mine sites that make up the majority of the San Joaquin River Parkway Properties; and
10) Provide potential Parkway trail easements.

6.3.2 Summary of Significant Environmental Impacts

After applying CEQA standards of significance to the entire range of adverse impacts that would result from implementation of the project, the following significant and unavoidable impacts have been identified through the analysis presented in Chapter 4:

- Impact 4.1-1: Have a Substantial Adverse Effect on a Scenic Vista
- Impact 4.1-3: In Nonurbanized Areas, Substantially Degrade the Existing Visual Character or Quality of Public Views (i.e., Views Experienced from Publicly Accessible Vantage Point(s) of the Project Sites and their Surroundings)
- Impact 4.17-1: Conflict with a Program, Plan, Ordinance, or Policy Addressing the Circulation System, Including Transit, Roadway, Bicycle and Pedestrian Facilities

The proposed project would also result in significant impacts related to aesthetics and visual resources, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, transportation, tribal cultural resources, and wildfire that would be reduced to less than significant levels through implementation of mitigation measures identified in Chapter 4, Sections 4.4, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.13, 4.17, 4.18, and 4.20, respectively.

6.4 ALTERNATIVES DEVELOPMENT PROCESS

This section discusses the County's process for formulating alternatives to the project for analysis in this Draft EIR. First, a discussion of considerations associated with developing alternatives for mining projects is discussed. Second, is a discussion regarding the alternatives that were considered, as well as the reasons that the alternatives were eliminated from further consideration. Finally, this section then provides a description of

the project alternatives that are evaluated below in Section 6.5, "Alternatives Impact Analysis and Summary."

6.4.1 Considerations for Mining and Reclamation Project Alternatives

CEQA requires that a range of reasonable and feasible alternatives to a proposed project be evaluated in an EIR. The County's consideration of alternatives to the proposed project emphasizes an effort to identify alternatives that would address significant and unavoidable and/or significant but mitigable impacts.

The formulation of alternatives has been undertaken by the County in accordance with CEQA requirements, and a reasonable range of alternatives is presented herein. However, due to the complexities in operating and reclaiming an existing mineral resource operation, the County cannot ascertain at this time whether actual implementation of one or more of the alternatives would be economically feasible from the perspective of the private entity (the Applicant). Many factors are considered in the mining and reclamation of an aggregate production site, including potential end uses, construction methodology, slope stability, contractual requirements, statutory and regulatory requirements, and other factors.

CEQA Guidelines Section 15126.6(f)(2)(b) recognize mining projects as an example of why evaluation of an alternative location may not be feasible, since the location of a mine must be near natural resources at a given location. For this reason and as discussed further in Section 6.4.2.1, below, the County explored a broad range of potential alternatives, but did not include considerations associated with alternative site locations.

It should be noted that in the County's process of formulating alternatives, limited consideration was given to the economies of scale (i.e., efficiencies related to the size of the operation) or whether the alternatives would be economically feasible and able to support the planned components, and level of mitigation that would be undertaken for the alternative. Such data is beyond the scope of a reasonable CEQA analysis and is considered unnecessary for purposes of a meaningful evaluation that compares environmental effects of potential alternatives with those of the proposed project.

6.4.2 Alternatives Considered but Rejected from Further Analysis

The following alternatives have been considered by the County but rejected for further analysis for the reasons discussed below.

6.4.2.1 Alternative Site Locations

CEQA Guidelines Section 15126.6(f)(2)(B) regarding alternative locations for projects recognizes that "in some cases there may be no feasible alternative locations for a

geothermal plant or mining project which must be in close proximity to natural resources at a given location." This statement recognizes that mining projects can only be located where mineral resources exist. Accordingly, successful development of a hard rock quarry at an alternative location would depend on a number of geologic, environmental and economic factors. Site-specific studies and tests (i.e., drilling and probing a new site to collect samples of soil and rock) would be required to evaluate a new site and its adequacy to support mining and processing operations. Issues to be addressed for a new site are dominated by availability and suitability. The site must be available for purchase or long-term lease with abundant aggregate resources to justify the investment necessary to permit and operate a hard rock quarry. Extensive overall feasibility studies would need to be prepared similar to the project to evaluate the following environmental and logistical concerns:

- Quality and quantity of aggregate resource and its suitability to meet construction specifications for concrete and asphalt for up to 100 years;
- Availability of water supply;
- Availability of electricity service;
- Distance to markets and potential increases in haul truck trip distances;
- Available truck routes, road design, and existing and predicted future traffic volumes and levels of service;
- Proximity to a state highway;
- Existing and future surrounding land uses and potential conflicts;
- Effects of the mining and processing plants on these surrounding land uses;
- Potential impacts to groundwater and surface water quality and consumption;
- Potential impacts to biological resources including special-status species and associated habitat;
- Potential presence of and impacts to significant cultural, tribal, and paleontological resources; and
- Options and costs for reclamation and use of site after mining.

No specific location with the attributes necessary to accomplish the project objectives is known in enough detail to be identified as a specific alternative site to feasibly meet the project objective of developing a known high-quality aggregate deposit.

An Alternative Location would result in eliminating aggregate production and reclamation impacts that would occur at the project site that have experienced aggregate production impacts over the past 100+ years. However, relocating the proposed operation to another site in the region would introduce new impacts to a site with no previous

aggregate mining activity. In addition, it would not take advantage of the existing ready-mix concrete plant located in proximity to the Fresno Region. A new mine in the Fresno region could potentially have similar or greater adverse environmental impacts and would increase the overall footprint of aggregate mines in the region.

An Alternative Location would also restrict the full mineral development of the Quarry Site in conflict with the existing state MRZ-2 classification and Fresno County General Plan and zoning designations, which identify the site as having present aggregate deposits of regional and local significance. The interim loss of this aggregate resource due to an alternative location could cause future shortages of construction material in the Fresno region.

California Public Resources Code Section 2772(c)(9) requires an assessment of the effect of implementation of the reclamation plan on future mining in the area. An Alternative Location would leave recoverable resources at the existing project sites and thus, would not conserve other areas of aggregate resources for future recovery. As a result, an Alternative Location would be inconsistent with Goal OS-C of the Fresno County General Plan Mineral Resources Section of the Open Space and Conservation Element to conserve areas identified as containing significant mineral deposits for potential future use. Based on this analysis, an Alternative Location was rejected from further evaluation.

6.4.2.2 Reduced Operational Life

A Reduced Operational Life Alternative would limit the permitted operational period of the proposed project from 100 years to a lesser period. For the purposes of this analysis, a period of 50 years is assumed. It is also assumed that this alternative would not change the permitted annual processing quantities, and that daily production and sales volumes are the same as those of the proposed project. A Reduced Operational Life Alternative would have the same hours of operation and daily and annual production limits as the proposed project. As a result of the Reduced Operational Life of the quarry, this alternative would reduce the total amount of material mined and processed over its operational life. This would also reduce the total volume of the quarry and reduce the total depth of the quarry. Other aspects of this alternative would be similar to those of the proposed project. Maximum daily and annual production would remain as proposed, and the Plant Site and other components of the project would remain as proposed.

For the duration of operations at the quarry, a Reduced Operational Life Alternative would result in impacts similar to those of the proposed project. Ground disturbance associated with the project sites, access roads, and mined areas of project sites would not be expected to change. Visual impacts of the project associated with the processing plant facilities would also occur as described for the proposed project. However, visual impacts

associated with the excavation of the Quarry Site quarry pit would be reduced as the area of the excavation would be reduced under this alternative thus incrementally improving views at surrounding public viewpoints. On a daily and annual basis, traffic, air emissions, and noise would occur as described for the proposed project. However, due to the Reduced Operational Life Alternative, these impacts would occur for a shorter duration (e.g., 50 years compared to 100 years for the proposed project). In addition, due to the reduced quarry pit depth less groundwater drawdown would occur as less dewatering would be required during mining and less groundwater inflow would occur after reclamation.

However, the Reduced Operational Life Alternative would restrict the full mineral development of the project site. This conflicts with the existing state MRZ-2 classification and the Fresno County General Plan and zoning designations for the project sites, which identify the project sites as having aggregate deposits of regional and local significance. The interim loss of this aggregate resource could cause future shortages of construction and aggregate material in the Fresno region.

In addition, the reduced operational life of the project would require the Applicant, or other aggregate suppliers, to search for a new aggregate source to supply the Fresno region's needs. Should another mine location within the county be selected, that mine could potentially result in similar, greater, or additional adverse environmental impacts and would increase the overall footprint of aggregate mines in the County.

The Reduced Operational Life Alternative would partially meet project objectives 1, 2, and 4, which all seek to continue aggregate mining into the future, but to a lesser extent than the proposed project. This alternative would meet the remaining project objectives (3, and 5 through 10).

Based on this analysis, the County eliminated the Reduced Operational Life Alternative from further consideration as an alternative in this EIR as it would reduce utilization of a known MRZ-2 resource in conflict with Fresno County's General Plan and does not fully meet some of the project objectives.

6.4.2.3 Reduced Mining Depth (200 Feet)

A Reduced Mining Depth (200 Feet) Alternative would reduce total mining depth from the proposed 600 feet below ground surface (bgs) to 200 feet bgs (i.e., a 66% reduction in the proposed overall quarry depth) with no change to proposed annual mining production or sales volumes. This alternative would result in the loss of approximately 60% of recoverable aggregate reserves and a corresponding 54-year reduction in the

length of operations from 100 years to 46 years, which is similar to the Reduced Operational Life Alternative discussed previously (see Section 6.4.2.2, above).

Under this alternative, some impacts would be similar to the proposed project while others would be reduced. For instance, ground disturbance associated with the Plant Site, access roads, and mined areas of the Quarry Site would be substantially similar to the proposed project. On a daily and annual basis, traffic, air emissions, and noise associated with this alternative would occur as described for the proposed project but for a significantly shorter duration. In addition, visual impacts associated with the processing plant facilities would occur as described for the proposed project. However, visual impacts associated with the excavation of the quarry pit would be reduced as the reduced excavation depth would improve views at surrounding public viewpoints. Furthermore, due to the reduced quarry pit depth, less groundwater drawdown would occur as less dewatering would be required during mining and less groundwater inflow would occur after reclamation.

SMARA Section 2772(c)(9) requires an assessment of the effect of implementation of the reclamation plan on future mining in the area. A Reduced Mining Depth (200 Feet) Alternative would restrict the full mineral development of the project site. This conflicts with the existing state MRZ-2 classification and the Fresno County General Plan and zoning designations, which identify the site as having aggregate deposits of regional and local significance. The interim loss of this aggregate resource could cause the premature development of other aggregate reserves in the County or future shortages of construction material in the Fresno region.

In addition, the reduced operational life of the project would require the Applicant, or other aggregate suppliers, to search for another aggregate source to supply the County's and Fresno regional needs. Should another mine location within the county be selected, that mine could potentially result in similar, greater, or additional significant environmental impacts and would increase the overall footprint of aggregate mines in the County. While the Operator or a successor would have the option to request permit modification to mine to a greater depth in the future and recover more of the aggregate reserve at the project sites, the additional processing and permitting costs required could make this infeasible.

A Reduced Mining Depth (200 Feet) Alternative would partially meet project objectives 1, 2 and 4, which all seek to continue aggregate mining into the future, but to a lesser extent than the proposed project. This alternative would meet the remaining project objectives (3, and 5 through 10).

Based on this analysis, the County eliminated the Reduced Mining Depth (200 Feet) Alternative from further consideration as an alternative in this EIR because it would reduce utilization of a known MRZ-2 resource in conflict with Fresno County's General Plan and does not fully meet some of the project objectives.

6.5 PROJECT ALTERNATIVES

The alternatives defined for this EIR incorporate changes to the project as proposed that would address certain impact issues associated with the project.

It should be noted that the Applicant has not provided information to the County regarding the economic, technological, and physical feasibility of these alternatives, thus it is unknown whether these alternatives could be feasibly developed by the Applicant if approved in lieu of the proposed project.

The following alternatives are described and evaluated in the following subsections:

- Alternative 1: No Project;
- Alternative 2: Reduced Mining Depth (400 Feet[1]);
- Alternative 3: Reduced Mining Depth (300 Feet[1]);
- Alternative 4: Reduced Mining Depth (300 Feet[1]) with Additional Setbacks; and,
- Alternative 5: Reduced Mining Depth (400 Feet[1]) with Reduced Annual Sales (2.5 MTY).

6.5.1 Methodology for Analysis of Impacts to Groundwater Supplies

The analysis of each project alternative's impact on groundwater supplies is based on the technical memorandum, "Comparison of Drawdowns Resulting from Project Alternatives Quarry Site Area Rockfield Modification Project," prepared by EMKO (2023) and provided as Appendix K of this Draft EIR. The memorandum evaluates the three reduced depth alternatives (Alternatives 2, 3, and 4) and a reduced depth and reduced annual sales alternative (Alternative 5) and estimates the reduction in the water column in nearby wells due to drawdowns from dewatering. The results of this evaluation are summarized in Table 6-1 and described in greater detail in Appendix K.

[1] Refers to depth below the ground surface prior to any mining that has already occurred at the project sites

Table 6-1
Calculated Drawdowns Due to Dewatering for Proposed Project and Project Alternatives

Well ID	Water Column	15% Impact Threshold (Ft)	Proposed Project				Alternative 2				Alternative 3				Alternative 4				Alternative 5			
			Without Recharge		*With Recharge*		*Without Recharge*		*With Recharge*		*Without Recharge*		*With Recharge*		*Without Recharge*		*With Recharge*		*Without Recharge*		*With Recharge*	
			Ft	*%*	*Ft*	*%*	*Ft*	*%*	*Ft*	*%*	*Ft*	*%*	*Ft*	*%*	*Ft*	*%*	*Ft*	*%*	*Ft*	*%*	*Ft*	*%*
24C North	233	35	52	**22**	26	11	34	14.5	17	7.3	23	10.0	11.7	5.0	23	9.7	11	4.9	34	14.5	17	23
24C South	591	89	69	12	35	6	45	7.6	23	3.8	31	5.3	15.75	2.7	30	5.1	15	2.6	7.6	23	3.8	31
24F	660	99	70	11	35	5	46	6.9	23	3.4	32	4.8	15.75	2.4	31	4.6	15	2.3	46	6.9	23	34
Beck Ranch "Ranch Well"	166	25	64	**39**	32	**19**	42	**25.1**	21	12.5	29	**17.3**	14.4	8.7	28	**16.8**	14	8.4	42	**25.1**	21	1.5
Beck Ranch "Oleander Well"	150	23	61	**41**	31	**21**	40	**26.4**	20	13.4	27	**18.3**	13.95	9.3	27	**17.8**	14	9.0	40	**26.4**	20	13.4
Beck Ranch "New Well"	135	20	58	**43**	29	**21**	38	**27.9**	19	14.0	26	**19.3**	13.05	9.7	25	**18.8**	13	9.4	38	**27.9**	19	14.0
Beck Ranch "Dog House Well"	140	21	88	**63**	44	**31**	57	**40.9**	29	20.4	40	**28.3**	19.8	14.1	38	**27.4**	19	13.7	57	**40.9**	29	40
CSA 44C #2	307	46	59	**19**	30	10	38	12.5	20	6.4	27	8.6	13.5	4.4	26	8.4	13	4.3	12.5	20	6.4	27
CSA 44C #3	164	22	60	**37**	30	18	39	**23.8**	20	11.9	27	**16.5**	13.5	8.2	26	**16.0**	13	8.0	**23.8**	20	11.9	27
Lost Lake Park Well	212	32	33	**16**	17	8	21	10.1	11	5.2	15	7.0	7.65	3.6	14	6.8	7	3.5	21	10.1	11	5.2
N Friant A	670	101	31	4	16	2	20	3.0	10	1.6	14	2.1	7.2	1.1	14	2.0	7	1.0	20	3.0	10	1.6
N Friant B	247	37	17	7	9	4	11	4.5	6	2.4	8	3.1	4.05	1.6	7	3.0	4	1.6	11	4.5	6	2.4

Table Notes: Percent reductions equal to or exceeding the 15% criterion identified in Mitigation Measure 4.10-10 provided in Section 4.10, "Hydrology and Water Quality" of this Draft EIR are shown in **red**; Drawdown measurements rounded to the nearest foot.

6.5.2 Alternative 1: No Project

Description

The discussion of the No Project Alternative below considers Alternative 1 as compared to the proposed project. Under this Alternative, mining and processing operations on the Plant Site and Quarry Site would continue unchanged through 2026 under existing use permits. At the Quarry Site, there would be no expansion of mining area or depth, and no blasting would occur. In addition, none of the processing plants currently located at the Plant Site would be relocated to the Quarry Site. At the Plant Site, mining would continue under existing permits. No new employees would be added to either project site. Furthermore, extension of public trails through the site would not occur as no public easements would be created. Site reclamation at both the Quarry Site and Plant Site would be completed in accordance with the existing reclamation plan.

Evaluation of a No Project Alternative is required under CEQA Guidelines Section 15126.6(e). The No Project Alternative must include consideration for what could be expected to occur in the reasonably foreseeable future, given the existing zoning and General Plan land use designations for the site as well as any existing land use entitlements, including conditional use permits (CUPs).

As discussed in greater detail in Section 2.1, "Introduction," of Chapter 2 of this Draft EIR, mining and processing operations have been continuous at the project sites for over 100 years under multiple CUPs issued by Fresno County.

The Plant Site currently operates under CUPs 367, 2209, 3063, and 3093. The CUPs allow aggregate mining of the alluvial deposit; plant operations including an aggregate processing plant, a ready-mix concrete plant, a hot-mix asphalt plant (inactive since 2009), and related supportive facilities; and the processing of raw aggregate mined from the Applicant's current Quarry Site.

The Quarry Site currently operates under CUPs 367, 2032, 3063, and 3093. Since there are no plant operations permitted at the Quarry Site, the CUPs allow the interplant haul of approximately 1.4 MT per year of raw aggregate via North Friant Road approximately 1.1 miles south to the Plant Site for processing. Under the No Project Alternative, mining and processing operations would continue until existing permits expire in 2026.

Under the existing reclamation plan, the Quarry Site and Plant Site would be reclaimed as open space uses including lakes and grazing land. When mining operations cease, all plant structures, buildings, excavation equipment, and septic systems would be removed from the Quarry Site and the Plant Site in accordance with County requirements. The resulting land would be contoured. The excavation on the Plant Site would fill with

groundwater creating a new ±11-acre lake. The excavations on the Quarry Site would create a new 25-acre lake in the northern portion of the site and a new 66-acre lake in the southern portion of the site. Overburden would be used to fill and slope the slopes surrounding the lakes above the water surface. Both the Quarry Site and the Plant Site would be planted with native grasses on an average of 2.5-inch-deep native topsoil. Trees and landscaped berms would be planted to provide screening along the North Friant corridor at both the Quarry Site and the Plant Site. Riparian trees would be expected to "volunteer" or naturally grow around the lakes.

The No Project Alternative would not meet many of the project objectives. This alternative would not meet Objectives 1 through 7 as mining operations would cease when existing permits expire. The No Project Alternative would also fail to meet project objective 10 as no public easements would be created on either the Quarry Site or the Plant Site for future trail development. This alternative would meet project objectives 8 and 9, as the Quarry Site and Plant Site would be reclaimed to open space which could provide wildlife habitat consistent with the San Joaquin River Parkway Master Plan.

Impact Analysis

Aesthetics and Visual Resources

Alternative 1 would have reduced aesthetic impacts compared to the proposed project. Under this alternative, new processing facilities (i.e., aggregate processing plant, ready-mix concrete plant, and hot-mix asphalt plant) would not be relocated to the Quarry Site and would not be visible from sensitive viewpoints. The existing quarry pit on the Quarry Site would not be excavated to a greater depth. As a result, impacts to the visual quality at Locations #12 and #13 would be less severe compared to the proposed project. Furthermore, both the Plant Site and the Quarry Site would be reclaimed as open space and wildlife habitat sooner under the No Project Alternative. Thus, Alternative 1 would have a reduced impact on aesthetics and visual resources compared to the proposed project.

Agricultural and Forestry Resources

Neither the proposed project nor Alternative 1 would result in any adverse impacts to agricultural or forestry resources. Thus, Alternative 1 would have a similar impact on agricultural and forestry resources as the proposed project.

Air Quality

Under Alternative 1, no mining equipment would be relocated from the Plant Site and installed at the Quarry Site. Thus, no construction emissions would occur should Alternative 1 be implemented. In addition, mining operations would cease when existing permits expire in 2026, and reclamation would commence. Thus, operational

emissions would be significantly lower under Alternative 1 compared to the proposed project. Mitigation measure 4.3-2 would not be required to reduce criteria pollutant emissions or to avoid exposure of sensitive receptors to substantial pollutant concentrations and mitigation measure 4.3-4 would not be required to reduce potential odorous emissions. Alternative 1 would have reduced impacts on air quality compared to the proposed project.

Biological Resources

Under Alternative 1, there would be no expansion of mining operation and no blasting. Thus, the project would not create any new impacts to wildlife or associated habitat. Mitigation measures 4.4-1a through 4.4-1c requiring preconstruction surveys for burrowing owl, western pond turtle, western spadefoot, and nesting birds would not be required. Therefore, Alternative 1 would have reduced impacts on biological resources compared to what would occur under the proposed project.

Cultural Resources

Under Alternative 1, mining activities would not extend into undisturbed areas of the Quarry site and there would be no new potential to inadvertently impact archaeological resources or human remains. Mitigation Measures 4.5-2 and 4.5-3 would not be required to protect discovered resources or unmarked burials. Therefore, Alternative 1 would have reduced impacts on cultural resources compared to the proposed project.

Energy

Under Alternative 1, there would be no increase in consumption of electricity, natural gas, diesel, or propane and nearly all energy use would cease after 2026. However, none of the energy efficiencies expected under the proposed project would occur. Therefore, in the short term, Alternative 1 would have a greater impact on energy resources than the proposed project as it may increase energy use on the project sites compared to the proposed project. However, in the long term, Alternative 1 would have a reduced impact on energy resources at the project site because energy use would essentially cease when existing permits expire in 2026.

Geology and Soils

Under Alternative 1, a mining pit would not be excavated on the Plant Site potentially creating unstable slopes and mitigation measure 4.7-6 would not be required to monitor slope stability. Also under Alternative 1, blasting would not occur, and a mining pit would not be excavated into the hardrock potentially creating unstable slopes. Mitigation measures 4.7-7a through 4.7-7c requiring ongoing slope stability and groundwater monitoring and kinematic analyses would not be needed to ensure

slope stability. Similarly, due to the lack of excavations under Alternative 1, there would be no impact to unknown paleontological resources and mitigation measure 4.7-11 would not be required. Alternative 1 would have a reduced impact related to geology and soils compared to the proposed project.

Greenhouse Gas

Under Alternative 1, no new asphalt plant would be installed or operated on the Quarry Site and Mitigation Measure 4.8-1 would not be required to address associated greenhouse gas (GHG) emissions. Further, operations would cease, and reclamation would commence when existing permits expire eliminating GHG emissions associated with mining equipment operation and truck trips at the project site and reducing GHG emissions. However, demand for aggregate resources would remain after closure of the Rockfield Quarry and longer haul trips from more distant quarries would occur to meet this demand, increasing overall GHG emissions in the region. Alternative 1 would have a greater impact on GHG emissions compared to the proposed project.

Hazards and Hazardous Materials

Under Alternative 1, the proposed hot-mix asphalt plant would not be constructed at the Plant Site and no mining equipment would be disassembled and relocated from the Plant Site to the Quarry Site. Thus, the use of hazardous materials during construction activities would be reduced under this alternative. However, both the proposed project and Alternative 1 would require the demolition or disassembly and removal of old mining facilities and equipment upon cessation of mining operations resulting in similar potential for exposure of workers to hazardous building materials. Under Alternative 1, no blasting would occur on the project sites and mitigation measure 4.10-1 (Blasting Protocols) would not be required to prevent contamination of ground or surface waters from explosive materials or reduce hazards associated with flyrock. The proposed project and Alternative 1 would have similar impacts related to emergency plan implementation and wildfire hazards.

Hydrology and Water Quality

As discussed in detail below, overall, the No Project Alternative would have a reduced impact related to hydrology and water quality when compared to the proposed project.

Surface Water Quality: Under both the proposed project and Alternative 1, surface water quality offsite would not be affected as all stormwater drainage would be contained onsite. Onsite, continued mining and processing operations under the proposed project would have the potential to adversely affect surface

water quality in a number of ways including erosion and sedimentation caused by land disturbance and contamination as a result of improper storage or handling of hazardous materials and blasting agents and accidental release of uncontained materials, wash water, and oils and grease from heavy equipment (Impact 4.10-1). Under Alternative 1, mining operations would cease on the Quarry Site when existing permits expire and would not be expanded to the Plant Site, and these potential water pollutant sources would be avoided. Mitigation Measure 4.10-1 (Blasting Protocols) would not be required as blasting of hardrock would not occur. However, during reclamation, Alternative 1 would have similar potential to impact surface water quality as the proposed project, as land disturbance, heavy equipment use, and demolition of structures and equipment would occur under both scenarios. Post reclamation, water quality impacts would be similar under the proposed project and Alternative 1 and would be associated with periodic maintenance activities (Impacts 4.10-2 and 4.10-3). Overall, the No Project Alternative would have reduced impacts to surface water quality compared to the proposed project.

Groundwater Quality: Under Alternative 1, no mining would occur at the Plant Site. Thus, no dewatering of excavation pits would be required, and no potentially hazardous materials associated with mining equipment and blasting would be present on the Plant Site (Impact 4.10-4). Therefore, groundwater that exceeds water quality standards would not be discharged onsite and there would be no new potential for accidental release of hazardous materials that could degrade groundwater quality. Also, because there would be no excavation pits on the Plant Site under the No Project Alternative, there would be no potential post-reclamation for buildup of iron and manganese in ponds which could flow into groundwater supplies exceeding groundwater quality standards (Impact 4.10-5). Thus, the adaptive management plan required under the proposed project (Mitigation Measures 4.10-5a and 4.10-5b) would not be necessary under Alternative 1. Overall, impacts to groundwater quality at the Plant Site would be reduced under the No Project Alternative compared to the proposed project.

Groundwater at the Quarry Site has high concentrations of nitrate, manganese, and gross alpha activity all unassociated with mining operations. Under the proposed project, groundwater would continue to be pumped to dewater the excavation and either used for dust suppression or discharged onsite for groundwater recharge. Under Alternative 1, mining on the Quarry Site would cease when existing permits expire in 2026, and dewatering would be discontinued. Thus, Operator funding of the local Prioritization and Optimization (P&O) under the CV SALTS Salinity Control Program to help achieve salt

sustainability in the Central Valley through the SNMP would not occur potentially worsening this regional impact. Neither the proposed project nor the No Project Alternative would violate water quality standards during mining or reclamation as the groundwater pumped for dewatering is not used as potable water or discharged to the San Joaquin River and has not been contaminated by any hazardous substances (Impact 4.10-6). However, under Alternative 1, no blasting would occur and thus no blasting agents would be used or stored on the project sites. Although it is unlikely for blasting agents to adversely affect groundwater quality, the No Project Alternative would avoid this potential impact entirely and Mitigation Measure 4.10-1 (Blasting Protocols) would not be required. Similarly, under Alternative 1, all mining equipment and vehicles would be removed from the project sites thus significantly reducing the potential for groundwater contamination resulting from mishandling or accidental release of hazardous materials such as fuels and lubricants (Impact 4.10-6). Post reclamation under the proposed project, the excavation pit would fill with a combination of rainfall, surface runoff, and groundwater inflow. Rainfall and stormwater runoff entering the excavation pit would have low concentrations of TDS, individual mineral components, and metals and would dilute groundwater inflow, reducing constituent concentrations in compliance with water quality standards and waste discharge requirements (Impact 4.10-7). Under the No Project Alternative, the quarry pit would not be mined further, and the volume of groundwater inflow would be reduced and further diluted compared to the proposed project. Therefore, overall impacts to groundwater quality during mining and reclamation under Alternative 1 would be reduced compared to the proposed project.

Groundwater Supplies and Recharge: Under Alternative 1, mining operations would cease when existing permits expire, and reclamation would commence. The Quarry Site excavation would not be deepened further, and mining would cease on the Plant Site when existing permits expire. As such, pumping to dewater excavations would also cease and there would be no potential to decrease groundwater supplies or interfere with existing groundwater supply wells or sustainable management of the basin during mining operations or reclamation. After reclamation, the existing Quarry Site excavation would begin to fill with groundwater inflow, rainfall, and surface runoff similar to what would eventually occur under the proposed project. However, under the No Project Alternative the excavation would be shallower and would draw less groundwater inflow resulting in lesser impacts on groundwater supplies, existing supply wells, and the sustainable management of the groundwater basin (Impacts 4.10-8 through 4.10-11). Under the proposed project, the use of groundwater recharge trenches along

the west side of the Quarry Site and implementation of Mitigation Measures 4.10-10a and 4.10-10b would reduce the potential for surface water from the San Joaquin River to flow into the quarry pit (Impact 4.10-12). However, under the No Project Alternative, dewatering of the quarry pit would cease and there would be no increased potential for river water to inflow into the quarry pit. Neither scenario would substantially interfere with groundwater recharge (Impact 4.10-13). Overall, impacts to groundwater supplies would be reduced under Alternative 1 compared to the proposed project.

Alteration of Drainage Patterns: Under the proposed project there would be minimal potential to result in erosion along the eastern bank of the San Joaquin River and the Operator would monitor the bank following large storm events to determine if repair measures are required. Under Alternative 1, mining would cease when existing permits expire, and such monitoring and repair measures would not be implemented by the Operator. Under both scenarios, continued ground disturbances would occur on both sites throughout reclamation activities potentially resulting in onsite erosion and sedimentation. However, compliance with existing regulations would minimize erosion potential (Impact 4.10-14). Under both the proposed project and Alternative 1, surface disturbances on the project sites would not result in flooding or impediment of flood flows as surface runoff would be contained onsite. Furthermore, the project sites do not rely on a developed stormwater drainage system and are not within the floodplain of the San Joaquin River or Little Dry Creek. Under both scenarios, the project sites would be graded to drain into the plant site pit or quarry pit and revegetated during reclamation (Impacts 4.10-15 and 4.10-16). Impacts related to the release of pollutants during a flood, tsunami, or seiche would be similar under both scenarios (Impact 4.10-17). Overall, impacts resulting from the alteration of drainage patterns on the project site would be similar under the No Project Alternative compared to the proposed project.

Land Use and Planning

Neither the proposed project nor Alternative 1 would result in any significant land use impacts. The project site is not within an established community and the proposed uses are consistent with all applicable land use plans and policies. Therefore, Alternative 1 would have a similar impact on land use and planning as the proposed project.

Mineral Resources

Under Alternative 1, mining operations at the project sites would end when existing permits expire in 2026 and reclamation of the project sites to open space would occur.

Thus, closure of the Rockfield Quarry would occur significantly sooner under Alternative 1 as compared to the proposed project and would result in a loss of recoverable aggregate reserve in conflict with state and local policies to conserve mineral resources. Alternative 2 would have a greater impact on mineral resources as compared to the proposed project.

Noise

Under Alternative 1, there would be no construction or relocation activities, and mining operations would cease entirely when existing permits expire. While reclamation activities would result in some equipment noise, overall short-term and long-term noise impacts would be less under Alternative 1 compared to the proposed project.

Population and Housing

Neither Alternative 1 nor the proposed project would directly or indirectly induce substantial population growth or displace any housing or people. Alternative 1 would have a similar impact on population and housing as the proposed project.

Public Services and Recreation

Neither Alternative 1 nor the proposed project would increase demand for public services or facilities such that new or expanded facilities would be needed. Alternative 1 would have a similar impact on public services and recreation as the proposed project.

Transportation

Neither the proposed project nor Alternative 1 would result in any significant transportation impacts. However, under Alternative 1, transport of raw material from the Quarry Site to the Plant Site would cease when existing permits expire thus significantly reducing traffic volumes on North Friant Road in the vicinity of the project site. Furthermore, Alternative 1 would not require the use of any oversized trucks to relocate mining facilities or equipment as is required under the proposed project. Thus Alternative 1 would have a reduced impact on transportation as the proposed project.

Tribal Cultural Resources

Under Alternative 1, there would be no expansion of mining into previously undisturbed areas on either project site. Thus, there would be no potential to disturb previously undiscovered tribal cultural resources and Mitigation Measures 4.5-1 through 4.5-3 would not be required. Thus, Alternative 1 would have less of an impact on tribal cultural resources than the proposed project.

Utilities and Service Systems

Neither the proposed project nor Alternative 1 would result in any significant impacts related to utilities and service systems. Thus, Alternative 1 would have similar impacts on utilities and service systems compared to the proposed project.

Wildfire

Under Alternative 1, no blasting would occur on the Quarry Site and Mitigation Measure 4.10-1 (Blasting Protocols) restricting use and handling of explosives on the site would not be required to reduce wildland fire hazards. Thus, Alternative 1 would have less of an impact on wildfire than the proposed project.

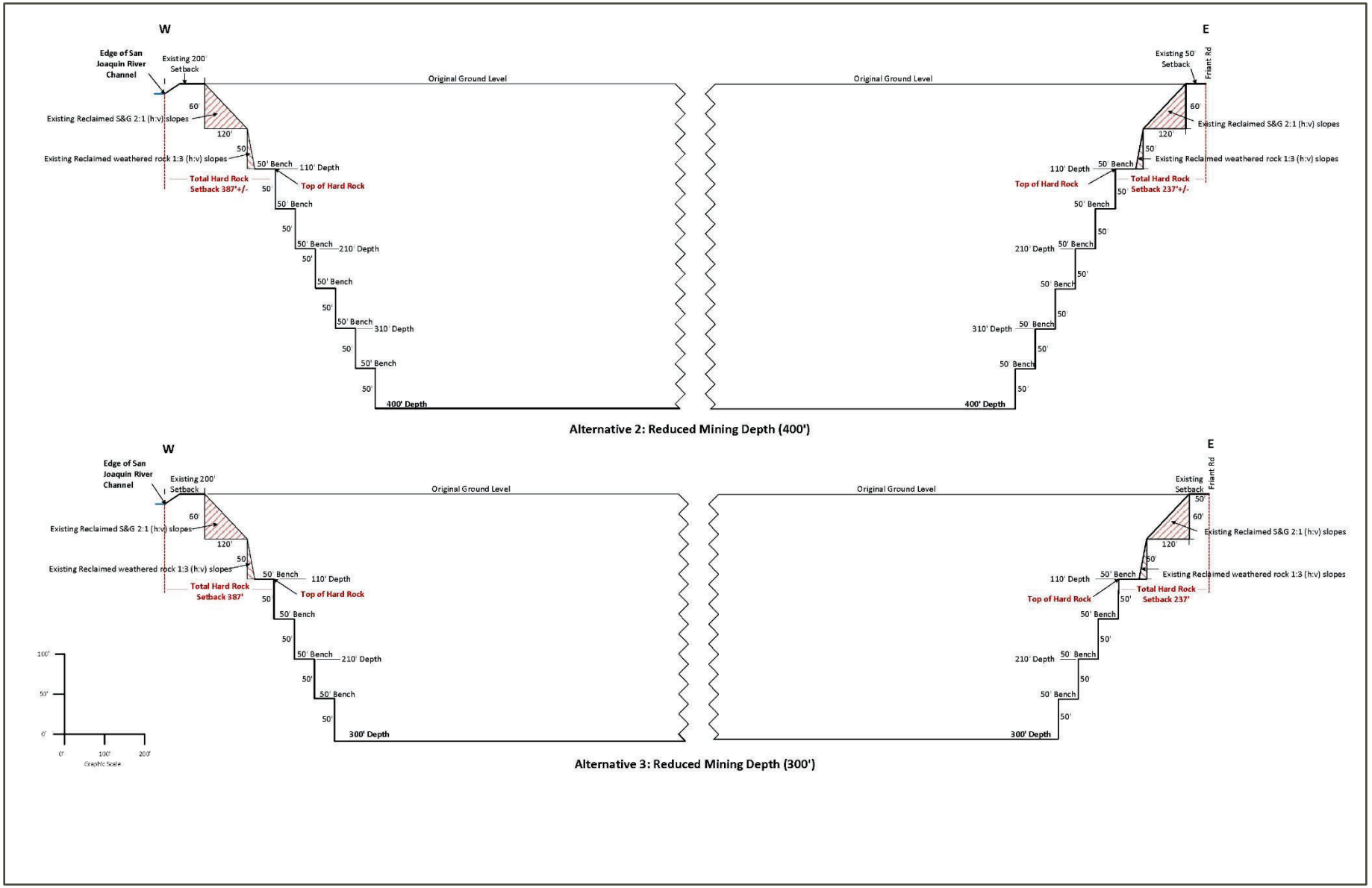
6.5.3 Alternative 2: Reduced Mining Depth (400 Feet)

Description

Alternative 2, the Reduced Mining Depth (400 Feet) Alternative, would reduce total mining depth from the proposed 600 feet to 400 feet with no change to proposed annual mining production or sales volumes. In addition, the total area of disturbance or project footprint would remain the same. The reduction in mining depth under Alternative 2 would result in a loss of approximately 21% of recoverable aggregate reserves and a corresponding 14-year reduction in the length of operations from 100 years to 86 years. Figure 6-1, "Project Alternatives 2 and 3," shows a cross section of the quarry pit under Alternative 2.

SMARA Section 2772(c)(9) requires an assessment of the effect of implementation of the reclamation plan on future mining in the area. The Reduced Mining Depth (400 Feet) Alternative would restrict the full mineral development of the project site. This conflicts with the existing state MRZ-2 classification and the Fresno County General Plan and zoning designations, which identify the site as having aggregate deposits of regional and local significance. The interim loss of this aggregate resource could cause the premature development of other aggregate reserves in the County or cause future shortages of construction material in the Fresno region.

The shortened operational life of the project would require the Applicant, or other aggregate suppliers, to search for another aggregate source to supply the County's needs. As a result, another mine could be developed elsewhere in the County with similar or additional significant environmental impacts and increasing the overall footprint of aggregate mines in the County.



SOURCE: CEMEX Rockfield; compiled by Benchmark Resources in 2024

Project Alternatives 2 and 3
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 6-1

BENCHMARK RESOURCES

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The Operator or successor would have the option to request permit modification to mine to a greater depth in the future and recover more of the aggregate reserve at the project sites. However, the additional processing and permitting costs required could make this infeasible. The Reduced Mining Depth (400 Feet) Alternative would leave recoverable resources at the existing project sites, and thus, would not conserve other areas of aggregate resources for future recovery. As a result, the Reduced Mining Depth (400 Feet) Alternative would be inconsistent with Goal OS-C of the Fresno County General Plan Mineral Resources Section of the Open Space and Conservation Element to conserve areas identified as containing significant mineral deposits for potential future use.

A Reduced Mining Depth (400 Feet) Alternative would partially meet project objectives 1, 2 and 4, which all seek to continue aggregate mining into the future, but to a lesser extent than the proposed project. This alternative would meet the remaining project objectives (3, and 5 through 10).

Impact Analysis

Aesthetics and Visual Resources

Alternative 2 would reduce the maximum depth of the Quarry Site quarry pit from 600 feet bgs to 400 feet bgs. All other aspects of the project would remain the same including the overall area of disturbance, the addition of new stockpiles on both the Plant Site and Quarry Site, and the addition of aggregate processing and production facilities to the Quarry Site. As shown in Figures 4.1-13 and 4.1-14, as mining of the quarry pit progresses, public views of the benched back wall from Viewpoints 12 and 13 would become more prominent with increased pit size and depth exposing more of the light colored benches that sit in stark visual contrast to the surrounding vegetation and water. The reduction in pit depth proposed by this alternative would have no effect on views from neighboring properties as the bottom of the pit would not be visible. Impacts 4.1-1 and 4.1-3) would remain significant at Viewpoint Locations #12 and #13 and Mitigation Measure 4.1-1 would still require rock staining to reduce visual contrast. As shown in Figures 4.1-15 and 4.1-16, even with application of rock stain to reduce visual contrast, the engineered linear appearance of the benches represent a substantial and adverse change in appearance compared to the existing natural conditions and the impacts would remain significant and unavoidable. Neither the proposed project nor Alternative 2 would have an impact on scenic resources within a state scenic highway or with regards to the creation of light and glare (Impacts 4.1-2 and 4.1-4). Alternative 2 would have similar impacts on aesthetics and visual resources compared to the proposed project.

Agricultural and Forestry Resources

Neither the proposed project nor Alternative 2 would result in any adverse impacts to agricultural or forestry resources. Thus, Alternative 2 would have a similar impact on agricultural and forestry resources as the proposed project.

Air Quality

Under Alternative 2, proposed annual mining production and sales volumes would be unchanged from the proposed project. Thus, daily and annual operational emissions would be similar to the proposed project. Mining equipment would still be relocated from the Plant Site and installed at the Quarry Site resulting in construction emissions similar to the proposed project. Due to the reduction in mining depth proposed under Alternative 2, operations would cease 14 years sooner than under the proposed project. Therefore, air emissions associated with operation and reclamation would end significantly sooner and potential impacts to sensitive receptors in future surrounding development could be avoided. Overall, impacts to air quality under Alternative 2 would be less compared to the proposed project.

Biological Resources

Under Alternative 2, the total mining depth of the quarry pit would be reduced but the total area of disturbance or project footprint would remain the same. Thus, Alternative 2 would have similar potential impacts to plant communities, wildlife habitat, and aquatic resources. Mitigation Measures 4.4-1a through 4.4-1c requiring preconstruction surveys for burrowing owl, western pond turtle, western spadefoot, and nesting birds would still be required. However, due to the reduced mining depth proposed under Alternative 2, operations would cease, and reclamation would be achieved 14 years sooner than under the proposed project. Therefore, potential impacts on wildlife resulting from operations (i.e., noise, vibration, lighting, etc.) would be reduced compared to the proposed project. Overall, impacts to biological resources under Alternative 2 would be reduced compared to the proposed project.

Cultural Resources

Under Alternative 2, the total mining depth of the quarry pit would be reduced but the total area of disturbance or project footprint would remain the same. Thus, Alternative 2 would have the same potential to inadvertently impact archaeological resources and human remains as the proposed project. Mitigation Measures 4.5-2 and 4.5-3 would still be required to protect discovered resources and unmarked burials. Overall, impacts to cultural resources would be similar under Alternative 2 compared to the proposed project.

Energy

Under Alternative 2, project operations would be unchanged from the proposed project and thus, in the short-term, energy consumption at the project sites would be similar. Due to the reduced mining depth proposed under Alternative 2, operations would cease, and reclamation would be achieved 14 years sooner, reducing energy consumption at the project sites in the long-term. Therefore, Alternative 3 would have reduced impacts related to energy compared to the proposed project.

Geology and Soils

Under Alternative 2, a mining pit would still be excavated on the Plant Site and the existing quarry pit on the Quarry Site would still be excavated into the hardrock requiring blasting. Thus, there would still be potential for the creation of unstable slopes and impacts to groundwater resources and Mitigation Measures 4.7-6 and 4.7-7a through 4.7-7c would still be imposed requiring monitoring of slope stability at the Plant Site and ongoing slope stability and groundwater monitoring and kinematic analyses at the Quarry site to ensure slope stability. There would also still be potential to disturb unknown paleontological resources on both sites and Mitigation Measure 4.7-11 would still be required to ensure appropriate management of any discovered resources. Therefore, Alternative 2 would have similar impacts related to geology, soils, and paleontological resources compared to the proposed project.

Greenhouse Gas Emissions

Under Alternative 2, processing equipment would still be installed at the Plant Site and the proposed annual mining production and sales volumes would be unchanged from the proposed project. Thus, the project's daily and annual contribution to global GHG emissions would be similar under Alternative 2 to the proposed project. However, due to the reduction in mining depth proposed under the Reduced Mining Depth (400 Feet) Alternative, operations would cease 14 years sooner than under the proposed project. Therefore, the project's total contribution to GHG emissions over the life of the project would be reduced compared to the proposed project. Demand for aggregate resources would remain, however, after closure of the Rockfield Quarry and one or more new or expanded mining operations would need to be developed in the County and/or Fresno region to meet this demand. The development of new or expansion of existing quarries or the reopening of Rockfield Quarry would result in even greater GHG emissions as aggregate is hauled in to Fresno from further distances, as compared to continuing the operation of the Rockfield Quarry as planned under the proposed project. Therefore, Alternative 2 would have worse impacts related to GHG emissions compared to the proposed project.

Hazards and Hazardous Materials

Under Alternative 2, the proposed hot-mix asphalt plant and other equipment relocation and construction activities would still occur on the project sites resulting in similar use of hazardous materials and risk of accidental release of such materials into the environment. In addition, both the proposed project and Alternative 2 would require the demolition or disassembly and removal of old mining facilities and equipment during reclamation resulting in similar potential for exposure of workers to hazardous building materials. The use and storage of blasting agents would occur on the project sites under both scenarios requiring Mitigation Measure 4.10-1 (Blasting Protocols) to prevent contamination of ground and/or surface waters from explosive materials and to reduce hazards associated with flyrock. However, under Alternative 2, blasting would end 14 years sooner compared to the proposed project. The proposed project and Alternative 2 would have similar impacts related to emergency plan implementation and wildfire hazards. Overall, the proposed project and Alternative 2 would have similar impacts related to hazards and hazardous materials.

Hydrology and Water Quality

As discussed in greater detail in the following discussion, overall, Alternative 2 would have a reduced impact related to hydrology and water quality when compared to the proposed project.

Surface Water Quality: Under both the proposed project and Alternative 2, surface water quality offsite would not be affected as all stormwater drainage would be contained onsite. Onsite, Alternative 2 would have similar impacts to surface water quality compared to the proposed project with continued mining and processing operations potentially resulting in erosion and sedimentation from land disturbance and contamination of onsite surface waters from improper storage or handling of hazardous materials and blasting agents and accidental release of uncontained materials, wash water, and oils and grease from heavy equipment (Impact 4.10-1). Thus, under Alternative 2, Mitigation Measure 4.10-1 (Blasting Protocols) would still be required. During and post-reclamation, water quality impacts would also be similar under both scenarios and would be associated with land disturbance, heavy equipment use, and demolition of structures and equipment as well as periodic maintenance activities (Impacts 4.10-2 and 4.10-3). Overall, the Reduced Mining Depth (400 Feet) would have similar impacts to surface water quality compared to the proposed project.

Groundwater Quality: Under Alternative 2, proposed mining operations at the Plant Site would be similar to the proposed project. Neither the proposed project nor Alternative 2 would violate groundwater quality standards from the discharge

of dewatering water as the discharges would occur to groundwater recharging trenches located on the project sites and not to the San Joaquin River, and the discharged water would not be used for potable uses. Also similar to the proposed project, Alternative 2 would introduce or continue mining equipment and processes, such as blasting, that would involve the use and storage of hazardous substances on the project sites. Under both scenarios, the potential for accidental release of these hazardous materials to groundwater supplies would be minimized through compliance with existing regulations (Impact 4.10-4). Post-reclamation, there would be similar potential for accumulated iron and manganese at the bottom of the Plant Site excavation pit to flow into groundwater supplies and violate water quality standards (Impact 4.10-5). Alternative 2 would also require implementation of an adaptive management plan (Mitigation Measures 4.10-5a and 4.10-5b) to address this potential impact. Overall, under Alternative 2 impacts to groundwater quality at the Plant Site would be similar to the proposed project.

Under Alternative 2, the 200-foot reduction in mining depth on the Quarry Site would result in a corresponding reduction in dewatering of the excavation pit. Thus, less groundwater that exceeds water quality standards for nitrate, manganese, and gross alpha activity would be removed from the Quarry Site pit and discharged to ponds and trenches onsite. However, neither the proposed project nor Alternative 2 would violate groundwater standards because dewatering water would not be discharged to the San Joaquin River or be used for potable uses. Under Alternative 2, the operator would still fund the local P&O study to help achieve salt sustainability in the Central Valley through the SNMP. Under both Alternative 2 and the proposed project there would be similar potential for contamination of groundwater resulting from accidental release of hazardous materials associated with mining equipment and blasting (Impact 4.10-6) which would be minimized through compliance with related existing regulations and implementation of Mitigation Measure 4.10-1 (Blasting Protocol). Post reclamation under the proposed project, the excavation pit would fill with a combination of rainfall, surface runoff, and groundwater inflow. Rainfall and stormwater runoff entering the excavation pit would have low concentrations of TDS, individual mineral components, and metals and would dilute groundwater inflow, reducing constituent concentrations in compliance with water quality standards and waste discharge requirements (Impact 4.10-7). Under Alternative 2, the reduction in mining depth would reduce the volume of groundwater inflow into the excavation pit and further dilute the concentrations of TDS, minerals, and metals. Therefore, overall impacts to groundwater quality during mining and

reclamation on the Quarry Site would be reduced under Alternative 2 compared to the proposed project.

Groundwater Supplies and Recharge: Under Alternative 2, proposed mining operations and related impacts to groundwater supply wells and the sustainable management of the groundwater basin would be similar at the Plant Site compared to the proposed project (Impact 4.10-8 and 4.10-9). At the Quarry Site, the ultimate depth of mining in the quarry pit would be reduced to 400 feet bgs, thereby reducing the volume of dewatering and ending mining operations and dewatering on the site 14 years sooner than the proposed project. As shown in Table 6-1, potential groundwater drawdown to adjacent wells without recharge under Alternative 2 would be 65% of the drawdown from the proposed project (i.e., an estimated 39 feet of drawdown at Well CSA 44C #3 instead of an estimated 60 feet of drawdown at that same well prior to application of mitigation). Thus, Alternative 2 would appreciably reduce the number of potentially impacted wells, both with and without recharge, compared to the proposed project and would reduce the potential to impede sustainable management of the groundwater basin (Impacts 4.10-10 and 4.10-11). However, the Quarry Site Groundwater Adaptive Management Program detailed in Mitigation Measures 4.10-10a and 4.10-10b would still be needed to avoid potential impacts to nearby wells. Under both the proposed project and Alternative 2, the use of groundwater recharge trenches along the west side of the Quarry Site and implementation of Mitigation Measures 4.10-10a and 4.10-10b would reduce the potential for surface water from the San Joaquin River to flow into the quarry pit (Impact 4.10-12). Neither scenario would involve substantial development or otherwise result in substantial new impervious surfaces on the project sites such that recharge of the aquifer would be interrupted (Impact 4.10-13). Overall, impacts to groundwater supplies would be reduced under Alternative 2 compared to the proposed project.

Alteration of Drainage Patterns: Alternative 2, similar to the proposed project, would have minimal potential to result in erosion along the eastern bank of the San Joaquin River and the Operator would still be required to monitor the bank and implement repair measures as required. Both the Quarry Site and the Plant Site have been heavily disturbed and the natural drainage patterns have been altered from past project activities. Under both the proposed project and Alternative 2, continued ground disturbances during mining and reclamation would be similar and there would be minimal potential for erosion or siltation, flooding on or off-site, and interference with flood flows to occur (Impacts 4.10-14 through 4.10-16). Impacts related to the release of pollutants during a flood, tsunami, or seiche would be similar under both scenarios (Impact 4.10-17). Overall,

impacts resulting from the alteration of drainage patterns on the project site would be similar under the Reduced Mining Depth (400 Feet) Alternative compared to the proposed project.

Land Use and Planning

Neither the proposed project nor Alternative 2 would result in any significant land use impacts. The project site is not within an established community and the proposed uses are consistent with all applicable land use plans and policies. Therefore, Alternative 2 would have similar impacts related to land use and planning as the proposed project.

Mineral Resources

Under Alternative 2, mining operations at the project sites would end and reclamation would be achieved 14 years sooner compared to the proposed project. The reduction in mining depth under this alternative would result in a loss of approximately 21% of recoverable aggregate reserves in conflict with state and local policies to conserve mineral resources. Alternative 2 would have greater impacts on mineral resources as compared to the proposed project.

Noise

Under Alternative 2, proposed annual mining production and sales volumes would be unchanged from the proposed project. Thus, equipment operation, truck traffic, and blasting schedules and associated noise impacts would also be similar to the proposed project. However, under Alternative 2, mining operations would cease 14 years sooner than under the proposed project. Therefore, noise impacts under Alternative 2 would be less than those under the proposed project.

Population and Housing

Neither Alternative 2 nor the proposed project would directly or indirectly induce substantial population growth or displace any housing or people. Alternative 2 would have a similar impact on population and housing as the proposed project.

Public Services and Recreation

Neither Alternative 2 nor the proposed project would increase demand for public services or facilities such that new or expanded facilities would be needed. Alternative 2 would have a similar impact on public services and recreation as the proposed project.

Transportation

Neither the proposed project nor Alternative 2 would result in any significant transportation impacts. However, under Alternative 2, mining operations would cease 14 years earlier than under the proposed project thus reducing traffic volumes on North Friant Road in the vicinity of the project site. Thus Alternative 2 would have a reduced impact on transportation as the proposed project.

Tribal Cultural Resources

Due to the lack of consultation requests from local tribes and the highly disturbed condition of the project sites, neither the proposed project nor Alternative 2 would have the potential to disturb tribal cultural resources. Alternative 2 would have similar impacts on tribal cultural resources compared to the proposed project.

Utilities and Service Systems

Neither the proposed project nor Alternative 2 would result in any significant impacts related to utilities and service systems. Thus, Alternative 2 would have a similar impact on utilities and service systems compared to the proposed project.

Wildfire

Under Alternative 2, onsite operations including blasting would remain unchanged resulting in similar wildfire impacts compared to the proposed project. However, due to the reduced total mining depth proposed under Alternative 2, operations would cease, and reclamation would be achieved 14 years sooner. Once reclaimed, wildfire risk would be greatly reduced by ceasing blasting and by allowing the quarry pits to fill with water. Therefore, impacts on wildfire under Alternative 2 would be reduced compared to the proposed project.

6.5.4 Alternative 3: Reduced Mining Depth (300 Feet)

Description

Alternative 3, the Reduced Mining Depth (300 Feet), would reduce total mining depth from the proposed 600 bgs feet to 300 feet bgs with no change to proposed annual mining production or sales volumes. In addition, the total area of disturbance or project footprint would remain the same. The reduction in mining depth under Alternative 3 would result in a loss of approximately 39% of recoverable aggregate reserves and a corresponding 32-year reduction in the length of operations from 100 years to 68 years. Figure 6-1 shows a cross section of the quarry pit under Alternative 3.

SMARA Section 2772(c)(9) requires an assessment of the effect of implementation of the reclamation plan on future mining in the area. The Reduced Mining Depth (300 Feet)

Alternative would restrict the full mineral development of the project sites. This conflicts with the existing state MRZ-2 classification and the Fresno County General Plan and zoning designations, which identify the site as having aggregate deposits of regional and local significance. The interim loss of this aggregate resource could cause the premature development of other aggregate reserves in the County or future shortages of construction material in the Fresno region.

The shortened operational life of the project would require the Applicant, or other aggregate suppliers, to search for another aggregate source to supply the County's needs. As a result, another mine could be developed elsewhere in the County with similar or additional significant environmental impacts and increasing the overall footprint of aggregate mines in the County. The Operator or successor would have the option to request permit modification to mine to a greater depth in the future and recover more of the aggregate reserve at the project sites. However, the additional processing and permitting costs required could make this infeasible.

The Reduced Mining Depth (300 Feet) Alternative would leave a significant amount of recoverable resources at the existing project sites, and thus, would not conserve other areas of aggregate resources for future recovery. As a result, the Reduced Mining Depth (300 Feet) Alternative would be inconsistent with Goal OS-C of the Fresno County General Plan Mineral Resources Section of the Open Space and Conservation Element to conserve areas identified as containing significant mineral deposits for potential future use.

The Reduced Mining Depth (300 Feet) Alternative would partially meet project objectives 1, 2, and 4, which all seek to continue aggregate mining into the future, but to a lesser extent than the proposed project. This alternative would meet the remaining project objectives (3, and 5 through 10).

Impact Analysis

Aesthetics and Visual Resources

Alternative 3 would reduce the maximum depth of the quarry pit from 600 feet bgs to 300 feet bgs. All other aspects of the project would remain the same including the overall area of disturbance, the addition of new stockpiles on both the Plant Site and Quarry Site, and the addition of aggregate processing and production facilities to the Quarry Site. As shown in Figures 4.1-13 and 4.1-14, as mining of the quarry pit progresses, public views of the benched back wall from Viewpoint Locations #12 and #13 would become more prominent with increased pit size and depth exposing more of the light-colored benches that sit in stark visual contrast to the surrounding vegetation and water. The reduction in pit depth proposed by this alternative would

have no effect on views from neighboring properties as the bottom of the pit would not be visible. Impacts 4.1-1 and 4.1-3 would remain significant at Viewpoint Locations #12 and #13 and Mitigation Measure 4.1-1 would still require rock staining to reduce visual contrast. As shown in Figures 4.1-15 and 4.1-16, even with application of rock stain to reduce visual contrast, the engineered linear appearance of the benches represents a substantial and adverse change in appearance compared to the existing more natural conditions and the impacts would remain significant and unavoidable. Neither the proposed project nor this alternative would have an impact on scenic resources within a state scenic highway or with regards to the creation of light and glare (Impacts 4.1-2 and 4.1-4). Alternative 3 would have similar impacts on aesthetics and visual resources compared to the proposed project.

Agricultural and Forestry Resources

Neither the proposed project nor Alternative 3 would result in any adverse impacts to agricultural or forestry resources. Thus, Alternative 3 would have a similar impact on agricultural and forestry resources as the proposed project.

Air Quality

Under Alternative 3, proposed annual mining production and sales volumes would be unchanged from the proposed project. Thus, daily and annual operational emissions would be similar to the proposed project. Mining equipment would still be relocated from the Plant Site and installed at the Quarry Site resulting in construction emissions similar to the proposed project. Due to the reduction in mining depth proposed under Alternative 3, operations would cease 32 years sooner than under the proposed project. Therefore, air emissions associated with operation and reclamation would end significantly sooner and potential impacts to sensitive receptors in future surrounding development could be avoided. Overall, impacts to air quality under Alternative 3 would be reduced compared to the proposed project.

Biological Resources

Under Alternative 3, the total mining depth of the quarry pit would be reduced but the total area of disturbance or project footprint would remain the same. Thus, Alternative 3 would have similar potential impacts to plant communities, wildlife habitat, and aquatic resources. Mitigation Measures 4.4-1a through 4.4-1c requiring preconstruction surveys for burrowing owl, western pond turtle, western spadefoot, and nesting birds would still be required. However, due to the reduced mining depth proposed under Alternative 3, operations would cease, and reclamation would be achieved 32 years sooner than under the proposed project. Therefore, potential impacts on wildlife resulting from operations (i.e., noise, vibration, lighting, etc.)

would be reduced compared to the proposed project. Overall, impacts to biological resources under Alternative 3 would be reduced compared to the proposed project.

Cultural Resources

Under Alternative 3, the total mining depth of the quarry pit would be reduced but the total area of disturbance or project footprint would remain the same. Thus, Alternative 3 would have the same potential to inadvertently impact archaeological resources and human remains as the proposed project. Mitigation Measures 4.5-2 and 4.5-3 would still be required to protect discovered resources and unmarked burials. Overall, impacts to cultural resources would be similar under Alternative 3 compared to the proposed project.

Energy

Under Alternative 3, project operations would be unchanged from the proposed project and thus, in the short-term, energy consumption at the project sites would be similar. Due to the reduced mining depth proposed under Alternative 3, operations would cease, and reclamation would be achieved 32 years sooner avoiding substantial energy consumption at the project sites in the long-term. Therefore, Alternative 3 would have reduced impacts related to energy compared to the proposed project.

Geology and Soils

Under Alternative 3, a mining pit would still be excavated on the Plant Site and the existing quarry pit on the Quarry Site would still be excavated into the hardrock requiring blasting. Thus, there would still be potential for the creation of unstable slopes and impacts to groundwater resources and Mitigation Measures 4.7-6 and 4.7-7a through 4.7-7c would still be imposed requiring monitoring of slope stability at the Plant Site and ongoing slope stability and groundwater monitoring and kinematic analyses at the Quarry site to ensure slope stability. There would also still be potential to disturb unknown paleontological resources on both sites and Mitigation Measure 4.7-11 would still be required to ensure appropriate management of any discovered resources. Therefore, Alternative 3 would have similar impacts related to geology, soils, and paleontological resources compared to the proposed project.

Greenhouse Gas Emissions

Under Alternative 3, processing equipment would still be installed at the Plant Site and the proposed annual mining production and sales volumes would be unchanged from the proposed project. Thus, the project's daily and annual contribution to global GHG emissions would be similar under Alternative 3 to the proposed project. However, due to the reduction in mining depth proposed under the Reduced Mining Depth (300 Feet) Alternative, operations would cease 32 years sooner than under the

proposed project. Therefore, the project's total contribution to GHG emissions over the life of the project would be reduced compared to the proposed project. Demand for aggregate resources would remain, however, after closure of the Rockfield Quarry and one or more new or expanded mining operations would need to be developed in the Fresno region to meet this demand. The development of new or expansion of existing quarries or the reopening of Rockfield Quarry would result in even greater GHG emissions as aggregate is hauled into Fresno County from further distances, as compared to continuing the operation of the Rockfield Quarry as planned under the proposed project. Therefore, Alternative 3 would have worse impacts related to GHG emissions compared to the proposed project.

Hazards and Hazardous Materials

Under Alternative 3, the proposed hot-mix asphalt plant and other equipment relocation and construction activities would still occur on the project sites resulting in similar use of hazardous materials and risk of accidental release of such materials into the environment. In addition, both the proposed project and Alternative 3 would require the demolition or disassembly and removal of old mining facilities and equipment during reclamation resulting in similar potential for exposure of workers to hazardous building materials. The use and storage of blasting agents would occur on the project sites under both scenarios requiring Mitigation Measure 4.10-1 (Blasting Protocols) to prevent contamination of ground and/or surface waters from explosive materials and to reduce hazards associated with flyrock. The proposed project and Alternative 3 would have similar impacts related to emergency plan implementation and wildfire hazards. Thus, the proposed project and Alternative 3 would have similar impacts related to hazards and hazardous materials.

Hydrology and Water Quality

As discussed in greater detail in the following discussion, overall, Alternative 3 would have a reduced impact related to hydrology and water quality when compared to the proposed project.

Surface Water Quality: Under both the proposed project and Alternative 3, surface water quality offsite would not be affected as all stormwater drainage would be contained onsite. Onsite, Alternative 3 would have similar impacts to surface water quality compared to the proposed project with continued mining and processing operations potentially resulting in erosion and sedimentation from land disturbance and contamination of surface waters from improper storage or handling of hazardous materials and blasting agents and accidental release of uncontained materials, wash water, and oils and grease from heavy equipment (Impact 4.10-1). Thus, under Alternative 3, Mitigation Measure 4.10-1 (Blasting

Protocols) would still be required. During and post-reclamation, water quality impacts would also be similar under both scenarios and would be associated with land disturbance, heavy equipment use, and demolition of structures and equipment as well as periodic maintenance activities (Impacts 4.10-2 and 4.10-3). Overall, the Reduced Mining Depth (300 Feet) would have similar impacts to surface water quality compared to the proposed project.

Groundwater Quality: Under Alternative 3, proposed mining operations at the Plant Site would be similar to the proposed project. Neither the proposed project nor Alternative 3 would violate groundwater quality standards from the discharge of dewatering water as the discharges would occur to groundwater recharging trenches and not to the San Joaquin River and would not be used for potable uses. Also similar to the proposed project, Alternative 3 would introduce or continue mining equipment and processes that would involve the use and storage of hazardous substances on the project sites. Under both scenarios, the potential for accidental release of these hazardous materials to groundwater supplies would be minimized through compliance with existing regulations (Impact 4.10-4). Post-reclamation, there would be similar potential for accumulated iron and manganese at the bottom of the excavation pit to flow into groundwater supplies and violate water quality standards (Impact 4.10-5). Alternative 3 would also require implementation of an adaptive management plan (Mitigation Measures 4.10-5a and 4.10-5b) to address this impact. Overall, under Alternative 3 impacts to groundwater quality at the Plant Site would be similar to the proposed project.

Under Alternative 3, the 300-foot bgs reduction in mining depth on the Quarry Site would result in a corresponding reduction in dewatering of the excavation pit. Thus, less groundwater that exceeds water quality standards for nitrate, manganese, and gross alpha activity would be removed from the pit and discharged onsite. However, neither the proposed project nor Alternative 3 would violate groundwater standards because dewatering water would not be discharged to the San Joaquin River or be used for potable uses. Under Alternative 3, the operator would still fund the local P&O study to help achieve salt sustainability in the Central Valley through the SNMP. Under both Alternative 3 and the proposed project there would be similar potential for contamination of groundwater resulting from accidental release of hazardous materials associated with mining equipment and blasting (Impact 4.10-6) which would be minimized through compliance with related existing regulations and implementation of Mitigation Measure 4.10-1 (Blasting Protocol). Post reclamation under the proposed project, the excavation pit would fill with a combination of rainfall, surface runoff, and groundwater inflow. Rainfall and stormwater runoff entering

the excavation pit would have low concentrations of TDS, individual mineral components, and metals and would dilute groundwater inflow, reducing constituent concentrations in compliance with water quality standards and waste discharge requirements (Impact 4.10-7). Under Alternative 3, the reduction in mining depth would reduce the volume of groundwater inflow into the excavation pit and further dilute the concentrations of TDS, minerals, and metals. Therefore, overall impacts to groundwater quality during mining and reclamation on the Quarry Site would be reduced under Alternative 3 compared to the proposed project.

Groundwater Supplies and Recharge: Under Alternative 3, proposed mining operations and related impacts to groundwater supply wells and the sustainable management of the groundwater basin would be similar at the Plant Site compared to the proposed project (Impact 4.10-8 and 4.10-9). At the Quarry Site, the ultimate depth of mining in the quarry pit would be reduced to 300 feet, thereby reducing the volume of dewatering and ending mining operations and dewatering on the site 32 years sooner than proposed. As shown in Table 6-1, potential groundwater drawdown to adjacent wells without recharge under Alternative 3 would be 45% of the drawdowns from the proposed project (i.e., an estimated 27 feet of drawdown at Well CSA 44C #3 instead of an estimated 60 feet of drawdown prior to application of mitigation). Thus, Alternative 3 would appreciably reduce the number of potentially impacted wells, both with and without recharge, compared to the proposed project and would reduce the potential to impede sustainable management of the groundwater basin (Impacts 4.10-10 and 4.10-11). However, the Quarry Site Groundwater Adaptive Management Program detailed in Mitigation Measures 4.10-10a and 4.10-10b would still be needed to avoid potential impacts to nearby wells. Under both the proposed project and Alternative 3, the use of groundwater recharge trenches along the west side of the Quarry Site and implementation of Mitigation Measures 4.10-10a and 4.10-10b would reduce the potential for surface water from the San Joaquin River to flow into the quarry pit (Impact 4.10-12). Neither scenario would involve substantial development or otherwise result in substantial new impervious surfaces on the project sites such that recharge of the aquifer would be interrupted (Impact 4.10-13). Overall, impacts to groundwater supplies would be reduced under Alternative 3 compared to the proposed project.

Alteration of Drainage Patterns: Alternative 3, similar to the proposed project, would have minimal potential to result in erosion along the eastern bank of the San Joaquin River and the Operator would still be required to monitor the bank and implement repair measures as required. Both the Quarry Site and the Plant

Site have been heavily disturbed and natural drainage patterns altered from past project activities. Under both the proposed project and Alternative 3, continued ground disturbances during mining and reclamation would be similar and there would be minimal potential for erosion or siltation, flooding on or off-site, and interference with flood flows to occur (Impacts 4.10-14 through 4.10-16). Impacts related to the release of pollutants during a flood, tsunami, or seiche would be similar under both scenarios (Impact 4.10-17). Overall, impacts resulting from the alteration of drainage patterns on the project site would be similar under the Reduced Mining Depth (300 Feet) Alternative compared to the proposed project.

Land Use and Planning

Neither the proposed project nor Alternative 3 would result in any significant land use impacts. The project site is not within an established community and the proposed uses are consistent with all applicable land use plans and policies. Therefore, Alternative 3 would have similar impacts related to land use and planning as the proposed project.

Mineral Resources

Under Alternative 3, mining operations at the project sites would end and reclamation would be achieved 32 years sooner compared to the proposed project. The reduction in mining depth under this alternative would result in a loss of approximately 39% of recoverable aggregate reserves in conflict with state and local policies to conserve mineral resources. Alternative 3 would have greater impacts on mineral resources as the proposed project.

Noise

Under Alternative 3, proposed annual mining production and sales volumes would be unchanged from the proposed project. Thus, equipment operation, truck traffic, and blasting schedules and associated noise impacts would also be similar to the proposed project. However, under Alternative 3, mining operations would cease 32 years sooner than under the proposed project. Therefore, noise impacts under Alternative 3 would be less compared to those under the proposed project.

Population and Housing

Neither Alternative 3 nor the proposed project would directly or indirectly induce substantial population growth or displace any housing or people. Alternative 3 would have a similar impact on population and housing as the proposed project.

Public Services and Recreation

Neither Alternative 3 nor the proposed project would increase demand for public services or facilities such that new or expanded facilities would be needed. Alternative 3 would have a similar impact on public services and recreation as the proposed project.

Transportation

Neither Alternative 3 nor the proposed project would result in any significant transportation impacts. However, under Alternative 3, mining operations would cease 32 years earlier than under the proposed project thus reducing traffic volumes on North Friant Road in the vicinity of the project site. Thus Alternative 3 would have a reduced impact on transportation as the proposed project.

Tribal Cultural Resources

Due to the lack of consultation requests from local tribes and the highly disturbed condition of the project sites, neither the proposed project nor Alternative 3 would have the potential to disturb tribal cultural resources. Alternative 3 would have similar impacts on tribal cultural resources compared to the proposed project.

Utilities and Service Systems

Neither the proposed project nor Alternative 3 would result in any significant impacts related to utilities and service systems. Thus, Alternative 3 would have a similar impact on utilities and service systems compared to the proposed project.

Wildfire

Under Alternative 3, onsite operations including blasting would remain unchanged resulting in similar wildfire impacts compared to the proposed project. However, due to the reduced total mining depth proposed under Alternative 3, operations would cease, and reclamation would be achieved 32 years sooner. Once reclaimed, wildlife risk would be greatly reduced by ceasing blasting and by allowing the quarry pits to fill with water. Therefore, impacts on wildfire under Alternative 3 would be reduced compared to the proposed project.

6.5.5 Alternative 4: Reduced Mining Depth (300 Feet) With Additional Setbacks

Description

Alternative 4, the Reduced Mining Depth (300 Feet) with Additional Setbacks Alternative, would reduce total mining depth from the proposed 600 feet bgs to 300 feet bgs and would impose additional operational setbacks along the project site's eastern and western boundaries. On the project sites' eastern boundary, a 100-foot setback would be required

from Friant Road and the northeast pond. On the project sites' western boundary, a 100-foot setback would be required from the current 200-foot setback for a total 300-foot setback from the San Joaquin River. There would be no change to the proposed annual mining production or sales volumes. However, the total areas of disturbance or project footprint would be reduced by approximately 30 acres, or 10.6%. The reduction in mining depth under Alternative 4 would result in a loss of approximately 43% of recoverable aggregate reserves and a corresponding reduction in the length of operations from 100 years to 63 years. Figure 6-2, "Project Alternative 4," shows a cross section of the Quarry Site quarry pit under Alternative 4.

SMARA Section 2772(c)(9) requires an assessment of the effect of implementation of the reclamation plan on future mining in the area. The Reduced Mining Depth (300 Feet) with Additional Setbacks Alternative would restrict the full mineral development of the project site. This conflicts with the existing state MRZ-2 classification and the Fresno County General Plan and zoning designations, which identify the site as having aggregate deposits of regional and local significance. The interim loss of this aggregate resource could cause the premature development of other aggregate reserves in the County or future shortages of construction material in the Fresno region.

The shortened operational life of the project would require the Applicant, or other aggregate suppliers, to search for another aggregate source to supply the County's regional needs. As a result, another mine could be developed elsewhere in the County with similar or additional significant environmental impacts and increasing the overall footprint of aggregate mines in the County. The Operator or successor would have the option to request permit modification to mine to a greater depth in the future and recover more of the aggregate reserve at the project sites. However, the additional processing and permitting costs required could make this infeasible.

The Reduced Mining Depth (300 Feet) with Additional Setbacks Alternative would leave recoverable resources at the existing project sites, and thus, would not conserve other areas of aggregate resources for future recovery. As a result, the Reduced Mining Depth (300 Feet) with Additional Setbacks Alternative would be inconsistent with Goal OS-C of the Fresno County General Plan Mineral Resources Section of the Open Space and Conservation Element to conserve areas identified as containing significant mineral deposits for potential future use.

The Reduced Mining Depth (300 Feet) with Additional Setbacks Alternative would still meet project objectives 1, 2, and 4, which all seek to continue aggregate mining into the future, but to a lesser extent than the proposed project. This alternative would meet the remaining project objectives (3, and 5 through 10).

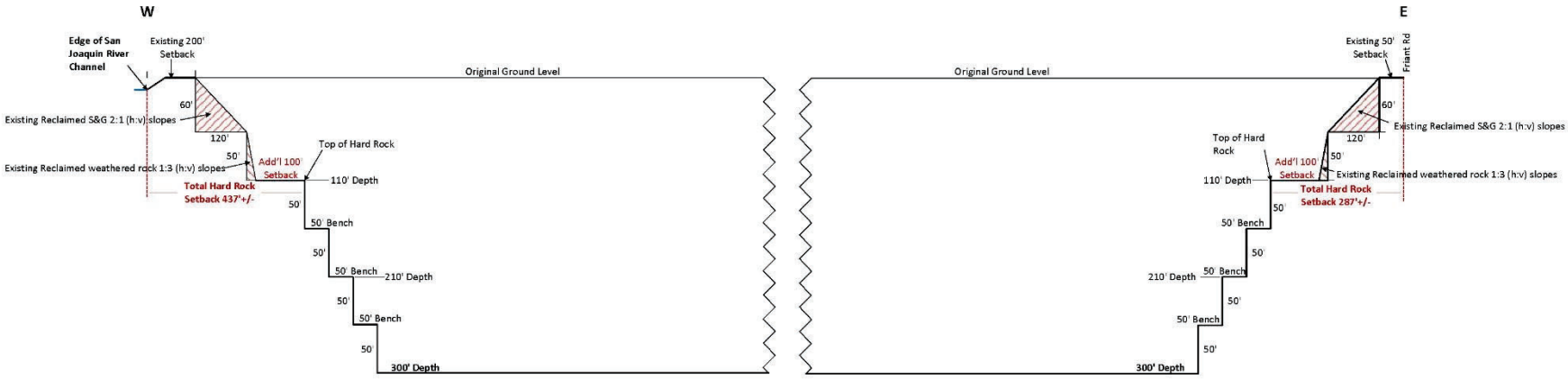
Impact Analysis

Aesthetics and Visual Resources

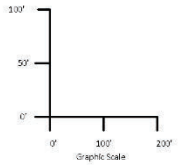
Alternative 4 would reduce the maximum depth of the Quarry Site quarry pit from 600 feet bgs to 300 feet bgs and would require additional operational setbacks from the San Joaquin River and Friant Road. All other aspects of the project would remain the same including the addition of new stockpiles on both the Plant Site and Quarry Site and the addition of aggregate processing and production facilities to the Quarry Site. As shown in Figures 4.1-13 and 4.1-14, as mining of the Quarry Site quarry pit progresses, public views of the benched back wall from Viewpoint Locations #12 and #13 would become more prominent with increased pit size and depth exposing more of the light-colored benches that sit in stark visual contrast to the surrounding vegetation and water. The reduction in pit depth proposed by this alternative would have no effect on views from neighboring properties as the bottom of the pit would not be visible. However, the proposed buffers would marginally reduce visual degradation by preserving more of the natural character of the land along the San Joaquin River which sits between Viewpoint Locations #12 and #13 and the Quarry Site. Regardless, the impacts (Impact 4.1-1 and 4.1-3) would remain significant at Viewpoint Locations #12 and #13 and Mitigation Measure 4.1-1 would require rock staining to reduce visual contrast. As shown in Figures 4.1-15 and 4.1-16, even with application of rock stain to reduce visual contrast, the engineered linear appearance of the benches represents a substantial and adverse change in appearance compared to the existing more natural conditions and the impacts would remain significant and unavoidable. Neither the proposed project nor the Alternative 4 would have an impact on scenic resources within a state scenic highway or with regard to the creation of light and glare (Impacts 4.1-2 and 4.1-4). Alternative 4 would have reduced impacts on aesthetics and visual resources compared to the proposed project.

Agricultural and Forestry Resources

Neither the proposed project nor Alternative 4 would result in any adverse impacts to agricultural or forestry resources. Thus, Alternative 4 would have a similar impact on agricultural and forestry resources as the proposed project.



Alternative 4: Reduced Mining Depth (300') with Additional 100' Setback



SOURCE: CEMEX Rockfield; compiled by Benchmark Resources in 2024

Project Alternative 4
ROCKFIELD MODIFICATION PROJECT
DRAFT EIR
Figure 6-2

BENCHMARK RESOURCES

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Air Quality

Under Alternative 4, proposed annual mining production and sales volumes would be unchanged from the proposed project. Thus, daily and annual operational emissions would be similar to the proposed project. Mining equipment would still be relocated from the Plant Site and installed at the Quarry Site resulting in construction emissions similar to the proposed project. Due to the reduction in mining depth proposed under Alternative 4, operations would cease 37 years sooner than under the proposed project. Therefore, air emissions associated with operation and reclamation would end correspondingly sooner, reducing the project's contribution to the basin's nonattainment status for criteria air pollutants and avoiding potential impacts to sensitive receptors in future surrounding development. Overall, impacts to air quality under Alternative 4 would be reduced compared to those of the proposed project.

Biological Resources

Under Alternative 4, the total mining depth of the quarry pit would be reduced by 300 feet bgs and the total area of surface disturbance would be reduced by 30 acres, or 10.6%. Thus, Alternative 4 would have reduced potential impacts to plant communities, including groundwater dependent vegetation near the San Joaquin River, wildlife habitat, and aquatic resources. However, Mitigation Measures 4.4-1a through 4.4-1c requiring preconstruction surveys for burrowing owl, western pond turtle, western spadefoot, and nesting birds would still be required. Due to the reduced mining depth proposed under Alternative 4, operations would cease, and reclamation would be achieved 37 years sooner than under the proposed project. Therefore, potential impacts on wildlife resulting from operations (i.e., noise, vibration, lighting, etc.) would be reduced compared to the proposed project. Overall, impacts to biological resources under Alternative 4 would be reduced compared to the proposed project.

Cultural Resources

Under Alternative 4, the total mining depth of the quarry pit would be reduced, and the total area of surface disturbance would be reduced by 30 acres, or 10.6%. This reduced surface disturbance would reduce the potential for project activities to inadvertently impact archaeological resources and human remains compared to the proposed project. Regardless, Mitigation Measures 4.5-2 and 4.5-3 would still be required to protect discovered resources and unmarked burials. Overall, impacts to cultural resources would be reduced under Alternative 4 compared to the proposed project.

Energy

Under Alternative 4, project operations would be unchanged from the proposed project and thus, in the short-term, energy consumption at the project sites would be similar. Due to the reduced mining depth proposed under Alternative 4, operations would cease, and reclamation would be achieved 37 years sooner avoiding substantial energy consumption at the project sites in the long-term. However, demand for aggregate resources would remain and one or more new or expanded mining operations would need to be developed in the region to meet this demand, which would result in additional energy consumption. Therefore, Alternative 4 would have similar impacts related to energy compared to the proposed project.

Geology and Soils

Under Alternative 4, a mining pit would still be excavated on the Plant Site and the existing quarry pit on the Quarry Site would still be excavated into the hardrock requiring blasting. Thus, there would still be potential for the creation of unstable slopes and impacts to groundwater resources and Mitigation Measures 4.7-6 and 4.7-7a through 4.7-7c would still be imposed requiring monitoring of slope stability at the Plant Site and ongoing slope stability and groundwater monitoring and kinematic analyses at the Quarry site to ensure slope stability. The reduction of surface disturbance by 30 acres or 10.6% proposed under Alternative 4 would reduce the potential to disturb unknown paleontological resources. However, Mitigation Measure 4.7-11 would still be required to ensure appropriate management of any discovered resources. Therefore, Alternative 4 would have similar impacts related to geology, soils, and paleontological resources compared to the proposed project.

Greenhouse Gas

Under Alternative 4, processing equipment would still be installed at the Plant Site and the proposed annual mining production and sales volumes would be unchanged from the proposed project. Thus, the project's daily and annual contribution to global GHG emissions would be similar under Alternative 4 to the proposed project. However, due to the reduction in mining depth and surface disturbance proposed under this alternative, operations would cease 37 years sooner than under the proposed project. Therefore, the project's total contribution to GHG emissions over the life of the project would be reduced compared to the proposed project. Demand for aggregate resources would remain, however, after closure of the Rockfield Quarry and one or more new or expanded mining operations would need to be developed in the region to meet this demand. The development of new or expansion of existing quarries with longer haul distances to the Fresno region would result in even greater GHG emissions compared to continuing the operation of the Rockfield Quarry as

planned under the proposed project. Therefore, Alternative 3 would have worse impacts related to GHG emissions compared to the proposed project.

Hazards and Hazardous Materials

Under Alternative 4, the proposed hot-mix asphalt plant and other equipment relocation and construction activities would still occur on the project sites resulting in similar use of hazardous materials and risk of accidental release of such materials into the environment. In addition, both the proposed project and Alternative 4 would require the demolition or disassembly and removal of old mining facilities and equipment during reclamation resulting in similar potential for exposure of workers to hazardous building materials. The use and storage of blasting agents would occur on the project sites under both scenarios requiring Mitigation Measure 4.10-1 (Blasting Protocols) to prevent contamination of ground and/or surface waters from explosive materials and to reduce hazards associated with flyrock. The proposed project and Alternative 4 would have similar impacts related to emergency plan implementation and wildfire hazards. Thus, the proposed project and Alternative 4 would have similar impacts related to hazards and hazardous materials.

Hydrology and Water Quality

As discussed in greater detail in the following discussion, overall, Alternative 4 would have a reduced impact related to hydrology and water quality when compared to the proposed project.

Surface Water Quality: Under both the proposed project and Alternative 4, surface water quality offsite would not be affected as all stormwater drainage would be contained onsite. Both the proposed project and Alternative 4 could impact surface water quality on the project sites as continued mining and processing operations could cause erosion and sedimentation from land disturbance and contamination of surface waters from improper storage or handling of hazardous materials and blasting agents and accidental release of uncontained materials, wash water, and oils and grease from heavy equipment (Impact 4.10-1). Under Alternative 4, Mitigation Measure 4.10-1 (Blasting Protocols) would still be required. However, the additional setbacks proposed under Alternative 4 would reduce the total area of surface disturbances on the project sites thus reducing the potential for erosion and sedimentation compared to the proposed project. During and post-reclamation, water quality impacts would be similar under both scenarios and would be associated with land disturbance, heavy equipment use, and demolition of structures and equipment as well as periodic maintenance activities (Impacts 4.10-2 and 4.10-3). Overall, Alternative 4 would have reduced impacts to surface water quality compared to the proposed project.

Groundwater Quality: Under Alternative 4, proposed mining operations at the Plant Site would be similar to the proposed project. Neither the proposed project nor Alternative 4 would violate groundwater quality standards from the discharge of dewatering water as it would discharge to groundwater recharging trenches and not to the San Joaquin River and would not be used for potable uses. Also similar to the proposed project, Alternative 4 would introduce and continue mining equipment and processes, that would involve the use and storage of hazardous substances on the project sites. Under both scenarios, the potential for accidental release of these hazardous materials to groundwater supplies would be minimized through compliance with existing regulations (Impact 4.10-4). Post-reclamation, there would be similar potential for accumulated iron and manganese at the bottom of the excavation pit to flow into groundwater supplies and violate water quality standards (Impact 4.10-5). Alternative 4 would also require implementation of an adaptive management plan (Mitigation Measures 4.10-5a and 4.10-5b) to address this impact. Overall, impacts to groundwater quality at the Plant Site under Alternative 4 would be similar to the proposed project.

Under Alternative 4, the 300-foot bgs reduction in mining depth on the Quarry Site would result in a corresponding reduction in dewatering of the excavation pit. Thus, less groundwater that exceeds water quality standards for nitrate, manganese, and gross alpha activity would be removed from the pit and discharged onsite. However, neither the proposed project nor Alternative 4 would violate groundwater standards because dewatering water would not be discharged to the San Joaquin River or be used for potable uses. Under Alternative 4, the operator would still fund the local P&O study to help achieve salt sustainability in the Central Valley through the SNMP. Under both Alternative 4 and the proposed project there would be similar potential for contamination of groundwater resulting from accidental release of hazardous materials associated with mining equipment and blasting (Impact 4.10-6) which would be minimized through compliance with related existing regulations and implementation of Mitigation Measure 4.10-1 (Blasting Protocol). Post reclamation under the proposed project, the excavation pit would fill with a combination of rainfall, surface runoff, and groundwater inflow. Rainfall and stormwater runoff entering the excavation pit would have low concentrations of TDS, individual mineral components, and metals and would dilute groundwater inflow, reducing constituent concentrations in compliance with water quality standards and waste discharge requirements (Impact 4.10-7). Under Alternative 4, the reduction in mining depth would reduce the volume of groundwater inflow into the excavation

pit and further dilute the concentrations of TDS, minerals, and metals. Therefore, overall impacts to groundwater quality during mining and reclamation on the Quarry Site would be reduced under Alternative 4 compared to the proposed project.

Groundwater Supplies and Recharge: Under Alternative 4, proposed mining operations and related impacts to groundwater supply wells and the sustainable management of the groundwater basin would be similar at the Plant Site compared to the proposed project (Impacts 4.10-8 and 4.10-9). At the Quarry Site, the ultimate depth of mining in the quarry pit would be reduced to 300 feet bgs, thereby reducing the volume of dewatering and ending mining operations and dewatering on the site 37 years sooner than proposed. As shown in Table 6-1, potential groundwater drawdown to adjacent wells without recharge under Alternative 4 would be 43% of the drawdowns from the proposed project (i.e., an estimated 34 feet of drawdown instead of an estimated 60 feet of drawdown prior to application of mitigation). Thus, Alternative 4 would appreciably reduce the number of potentially impacted wells, both with and without recharge, compared to the proposed project and would reduce the potential to impede sustainable management of the groundwater basin (Impacts 4.10-10 and 4.10-11). A criterion of 15% reduction in the water column is used to define the condition where a potentially significant impact may occur to the production capacity of a well. The 100-foot additional setback does not provide any additional decrease in the number of wells that may exceed the 15% criterion (EMKO 2023, page 2). However, the Quarry Site Groundwater Adaptive Management Program detailed in Mitigation Measures 4.10-10a and 4.10-10b would still be needed to avoid potential impacts to nearby wells. Under both the proposed project and Alternative 4, the use of groundwater recharge trenches along the west side of the Quarry Site and implementation of Mitigation Measures 4.10-10a and 4.10-10b would reduce the potential for surface water from the San Joaquin River to flow into the quarry pit (Impact 4.10-12). Neither scenario would involve substantial development or otherwise result in substantial new impervious surfaces on the project sites such that recharge of the aquifer would be interrupted (Impact 4.10-13). Overall, impacts to groundwater supplies would be reduced under Alternative 4 compared to the proposed project.

Alteration of Drainage Patterns: Alternative 4, similar to the proposed project, would have minimal potential to result in erosion along the eastern bank of the San Joaquin River and the operator would still be required to monitor the bank and implement repair measures as required. Both the Quarry Site and the Plant Site have been heavily disturbed and natural drainage patterns altered from past

project activities. Therefore, even with the reduced disturbance area proposed under Alternative 4, continued land disturbance would not further alter drainage courses and related impacts (i.e., erosion or siltation, flooding on or off-site, and interference with flood flows) would be similar to those of the proposed project (Impacts 4.10-14 through 4.10-16). Impacts related to the release of pollutants during a flood, tsunami, or seiche would also be similar under both scenarios (Impact 4.10-17). Overall, impacts resulting from the alteration of drainage patterns on the project site would be similar under Alternative 4 compared to the proposed project.

Land Use and Planning

Neither the proposed project nor Alternative 4 would result in any significant land use impacts. The project site is not within an established community and the proposed uses are consistent with all applicable land use plans and policies. Therefore, Alternative 4 would have similar impacts related to land use and planning as the proposed project.

Mineral Resources

Under Alternative 4, mining operations at the project sites would end and reclamation would be achieved 37 years sooner compared to the proposed project. The reduction in mining depth and footprint under this alternative would result in a loss of approximately 43% of recoverable aggregate reserves in conflict with state and local policies to conserve mineral resources. Alternative 4 would have greater impacts on mineral resources as the proposed project.

Noise

Under Alternative 4, proposed annual mining production and sales volumes would be unchanged from the proposed project. Thus, equipment operation, truck traffic, and blasting schedules and associated noise impacts would also be similar to the proposed project. However, under Alternative 4, mining operations would cease 37 years soon than under the proposed project. Therefore, noise impacts under Alternative 4 would be less compared to those under the proposed project.

Population and Housing

Neither Alternative 4 nor the proposed project would directly or indirectly induce substantial population growth or displace any housing or people. Alternative 4 would have a similar impact on population and housing as the proposed project.

Public Services and Recreation

Neither Alternative 4 nor the proposed project would increase demand for public services or facilities such that new or expanded facilities would be needed. Alternative 4 would have a similar impact on public services and recreation as the proposed project.

Transportation

Neither Alternative 4 nor the proposed project would result in any significant transportation impacts. However, under Alternative 4, there would be fewer trucks on the road due to mining ceasing 37 years earlier, thus reducing traffic volumes on North Friant Road in the vicinity of the project site. Thus Alternative 4 would have a reduced impact on transportation as the proposed project.

Tribal Cultural Resources

Due to the lack of consultation requests from local tribes and the highly disturbed condition of the project sites, neither the proposed project nor Alternative 4 would have the potential to disturb tribal cultural resources. Alternative 4 would have similar impacts on tribal cultural resources compared to the proposed project.

Utilities and Service Systems

Neither the proposed project nor Alternative 4 would result in any significant impacts related to utilities and service systems. Thus, Alternative 4 would have a similar impact on utilities and service systems compared to the proposed project.

Wildfire

Under Alternative 4, onsite operations including blasting would remain unchanged resulting in similar wildfire impacts compared to the proposed project. However, due to the reduced total mining depth and footprint proposed under Alternative 4, operations would cease, and reclamation would be achieved 37 years sooner. Once reclaimed, wildfire risk would be greatly reduced by ceasing blasting and by allowing the quarry pits to fill with water. Therefore, impacts related to wildfire under Alternative 4 would be reduced compared to the proposed project.

6.5.6 Alternative 5: Reduced Mining Depth (400 feet) With Reduced Annual Sales (2.5 MTY)

Description

Alternative 5, the Reduced Mining Depth (400 feet) with Reduced Annual Sales (2.5 MTY) Alternative would reduce total mining depth from the proposed 600 feet bgs to 400 feet bgs and would reduce the proposed annual aggregate sales volumes from 3.0 MT per

year to 2.5 MT per year. The total area of disturbance or project footprint would remain the same. The reduction in mining depth under Alternative 5 would result in a loss of approximately 21% of recoverable aggregate reserves and a corresponding 14-year reduction in the length of operations, from 100 years to 86 years. The reduced annual sales under Alternative 5 would reduce annual output by 17%.

SMARA Section 2772(c)(9) requires an assessment of the effect of implementation of the reclamation plan on future mining in the area. The Reduced Mining Depth with Reduced Annual Sales Alternative would restrict the full mineral development of the project sites. This conflicts with the existing state MRZ-2 classification and the Fresno County General Plan and zoning designations, which identify the site as having aggregate deposits of regional and local significance. The interim loss of this aggregate resource could cause the premature development of other aggregate reserves in the County or future shortages of construction material in the Fresno region.

The shortened operational life of the project would require the Applicant, or other aggregate suppliers, to search for another aggregate source to supply the County's needs. As a result, another mine could be developed elsewhere in the County with similar or additional significant environmental impacts and increasing the overall footprint of aggregate mines in the County. The Operator or successor would have the option to request permit modification to mine to a greater depth in the future and recover more of the aggregate reserve at the project sites. However, the additional processing and permitting costs required could make this infeasible.

Alternative 5 would leave recoverable resources at the existing project sites, and thus, would not conserve other areas of aggregate resources for future recovery. As a result, the Reduced Mining Depth with Reduced Annual Sales Alternative would be inconsistent with Goal OS-C of the Fresno County General Plan Mineral Resources Section of the Open Space and Conservation Element to conserve areas identified as containing significant mineral deposits for potential future use.

The Reduced Mining Depth with Reduced Annual Sales Alternative would partially meet project objectives 1, 2, and 4, which all seek to continue aggregate mining into the future, but to a lesser extent than the proposed project. This alternative would meet the remaining project objectives (3, and 5 through 10).

Impact Analysis

Aesthetics and Visual Resources

Alternative 5 would reduce mining depth from 600 feet bgs to 400 feet bgs and reduce annual sales from 3.0 MT per year to 2.5 MT per year. All other aspects of the project

would remain the same including the overall area of disturbance, the addition of new stockpiles on both the Plant Site and Quarry Site, and the addition of aggregate processing and sales facilities to the Quarry Site. As shown in Figures 4.1-13 and 4.1-14, as mining of the quarry pit progresses, public views of the benched back wall from Viewpoint Locations #12 and #13 would become more prominent with increased pit size and depth exposing more of the light-colored benches that sit in stark visual contrast to the surrounding vegetation and water. The reduction in pit depth proposed by this alternative would have no effect on views from neighboring properties as the bottom of the pit would not be visible. Impacts 4.1-1 and 4.1-3 would remain significant at Viewpoint Locations #12 and #13 and Mitigation Measure 4.1-1 would still require rock staining to reduce visual contrast. As shown in Figures 4.1-15 and 4.1-16, even with application of rock stain to reduce visual contrast, the engineered linear appearance of the benches represents a substantial and adverse change in appearance compared to the existing more natural conditions and the impacts would remain significant and unavoidable. Neither the proposed project nor Alternative 5 would have an impact on scenic resources within a state scenic highway or with regards to the creation of light and glare (Impacts 4.1-2 and 4.1-4). Alternative 5 would have similar impacts on aesthetics and visual resources compared to the proposed project.

Agricultural and Forestry Resources

Neither the proposed project nor Alternative 5 would result in any adverse impacts to agricultural or forestry resources. Thus, Alternative 5 would have a similar impact on agricultural and forestry resources as the proposed project.

Air Quality

Under Alternative 5, mining depth would be reduced from 600 feet bgs to 400 feet bgs and annual sales would be reduced from 3.0 MT per year to 2.5 MT per year. Thus, daily operational emissions would be approximately 17% less than compared to the proposed project. Mining equipment would still be relocated from the Plant Site and installed at the Quarry Site resulting in construction emissions similar to the proposed project. Due to the reduction in mining depth proposed under Alternative 5, operations would cease 14 years sooner than under the proposed project. Therefore, air emissions associated with operation and reclamation would also end sooner. Overall, impacts to air quality under Alternative 5 would be less as compared to the proposed project.

Biological Resources

Under Alternative 5, the total mining depth of the quarry pit would be reduced but the total area of disturbance or project footprint would remain the same. Thus,

Alternative 5 would have similar potential impacts to plant communities, wildlife habitat, and aquatic resources. Mitigation Measures 4.4-1a through 4.4-1c requiring preconstruction surveys for burrowing owl, western pond turtle, western spadefoot, and nesting birds would still be required. However, due to the reduced mining depth proposed under Alternative 5, operations would cease, and reclamation would be achieved 14 years sooner than under the proposed project. Therefore, potential impacts on wildlife resulting from operations (i.e., noise, vibration, lighting, etc.) would be reduced compared to the proposed project. Overall, impacts to biological resources under Alternative 5 would be reduced compared to the proposed project.

Cultural Resources

Under Alternative 5, the total mining depth of the quarry pit would be reduced but the total area of disturbance or project footprint would remain the same. Thus, Alternative 5 would have the same potential to inadvertently impact archaeological resources and human remains as the proposed project. Mitigation Measures 4.5-2 and 4.5-3 would still be required to protect discovered resources and unmarked burials. Overall, impacts to cultural resources would be similar under Alternative 5 compared to the proposed project.

Energy

Under Alternative 5, project operations would be reduced by 17% from the proposed project and thus, in the short-term, energy consumption at the project sites would be reduced. Due to the reduced mining depth and reduced annual sales under Alternative 5, operations would cease, and reclamation would be achieved 14 years sooner, reducing energy consumption at the Quarry Site in the long-term. However, demand for aggregate resources would remain and one or more new or expanded mining operations would need to be developed in the region to meet this demand. Therefore, Alternative 5 would have similar impacts related to energy compared to the proposed project.

Geology and Soils

Under Alternative 5, a mining pit would still be excavated on the Plant Site and the existing quarry pit on the Quarry Site would still be excavated into the hardrock requiring blasting. Thus, there would still be potential for the creation of unstable slopes and impacts to groundwater resources and Mitigation Measures 4.7-6 and 4.7-7a through 4.7-7c would still be imposed requiring monitoring of slope stability at the Plant Site and ongoing slope stability and groundwater monitoring and kinematic analyses at the Quarry Site to ensure slope stability. There would also still be potential to disturb unknown paleontological resources on both sites and Mitigation Measure 4.7-11 would still be required to ensure appropriate management of any discovered

resources. Therefore, Alternative 5 would have similar impacts related to geology, soils, and paleontological resources compared to the proposed project.

Greenhouse Gas Emissions

Under Alternative 5, processing equipment would still be installed at the Plant Site and the proposed annual mining and sales volumes would be reduced by 17% from the proposed project. Thus, the project's daily and annual contribution to global GHG emissions would be 17% less under Alternative 5 as compared to the proposed project. However, due to the reduction in mining depth, operations would cease 14 years sooner than under the proposed project. Therefore, the project's total contribution to GHG emissions over the life of the project would be reduced compared to the proposed project. Demand for aggregate resources would remain, however, after closure of the Rockfield Quarry and one or more new or expanded mining operations would need to be developed in the region to meet this demand. The development of new or expansion of existing quarries or the reopening of Rockfield Quarry would result in even greater GHG emissions as aggregate is hauled to the Fresno region from further distances, as compared to continuing the operation of the Rockfield Quarry as planned under the proposed project. Therefore, ultimately Alternative 5 would likely have worse impacts related to GHG emissions compared to the proposed project.

Hazards and Hazardous Materials

Under Alternative 5, the proposed hot-mix asphalt plant and other equipment relocation and construction activities would still occur on the project sites resulting in similar use of hazardous materials and risk of accidental release of such materials into the environment. In addition, both the proposed project and Alternative 5 would require the demolition or disassembly and removal of old mining facilities and equipment during reclamation resulting in similar potential for exposure of workers to hazardous building materials. The use of blasting agents would occur on the project sites under both scenarios requiring Mitigation Measure 4.10-1 (Blasting Protocols) to prevent contamination of ground and/or surface waters from explosive materials and to reduce hazards associated with flyrock. The proposed project and Alternative 5 would have similar impacts related to emergency plan implementation and wildfire hazards. Thus, the proposed project and Alternative 5 would have similar impacts related to hazards and hazardous materials.

Hydrology and Water Quality

As discussed in greater detail in the following discussion, overall, Alternative 5 would have a reduced impact related to hydrology and water quality when compared to the proposed project.

Surface Water Quality: Under both the proposed project and Alternative 5, surface water quality offsite would not be affected as all stormwater drainage would be contained onsite. Onsite, Alternative 5 would have similar impacts to surface water quality compared to the proposed project with continued mining and processing operations potentially resulting in erosion and sedimentation from land disturbance and contamination of surface waters from improper storage or handling of hazardous materials and blasting agents and accidental release of uncontained materials, wash water, and oils and grease from heavy equipment (Impact 4.10-1). During and post-reclamation, water quality impacts would also be similar under both scenarios and would be associated with land disturbance, heavy equipment use, and demolition of structures and equipment as well as periodic maintenance activities (Impacts 4.10-2 and 4.10-3). Overall, the Reduced Mining Depth with Reduced Annual Sales Alternative would have similar impacts to surface water quality compared to the proposed project.

Groundwater Quality: Under Alternative 5, proposed mining operations at the Plant Site would be similar to the proposed project. Neither the proposed project nor Alternative 5 would violate groundwater quality standards from the discharge of dewatering water as the discharges would occur to groundwater recharging trenches and not to the San Joaquin River and would not be used for potable uses. Also similar to the proposed project, Alternative 5 would introduce and continue mining equipment and processes that would involve the use and storage of hazardous substances on the project sites. Under both scenarios, the potential for accidental release of these hazardous materials to groundwater supplies would be minimized through compliance with existing regulations (Impact 4.10-4). Post-reclamation, there would be similar potential for accumulated iron and manganese at the bottom of the excavation pit to flow into groundwater supplies and violate water quality standards (Impact 4.10-5). Alternative 5 would also require implementation of an adaptive management plan (Mitigation Measures 4.10-5a and 4.10-5b) to address this impact. Overall, under Alternative 5 impacts to groundwater quality at the Plant Site would be similar to the proposed project.

Under Alternative 5, the 400-foot bgs reduction in mining depth on the Quarry Site would result in a corresponding reduction in dewatering of the excavation pit. Thus, less groundwater that might exceed water quality standards for nitrate, manganese, and gross alpha activity would be removed from the pit and discharged onsite. However, neither the proposed project nor Alternative 5 would violate groundwater standards because dewatering water would not be discharged to the San Joaquin River or be used for potable uses. Under Alternative 5, the operator would still fund the local P&O study to help achieve salt

sustainability in the Central Valley through the SNMP. Under both Alternative 5 and the proposed project there would be similar potential for contamination of groundwater resulting from accidental release of hazardous materials associated with mining equipment and blasting (Impact 4.10-6) which would be minimized through compliance with related existing regulations and implementation of Mitigation Measure 4.10-1 (Blasting Protocol). Post reclamation under the proposed project, the excavation pit would fill with a combination of rainfall, surface runoff, and groundwater inflow. Rainfall and stormwater runoff entering the excavation pit would have low concentrations of TDS, individual mineral components, and metals and would dilute groundwater inflow, reducing constituent concentrations in compliance with water quality standards and waste discharge requirements (Impact 4.10-7). Under Alternative 5, the reduction in mining depth would reduce the volume of groundwater inflow into the excavation pit and further dilute the concentrations of TDS, minerals, and metals. Therefore, overall impacts to groundwater quality during mining and reclamation on the Quarry Site would be reduced under Alternative 5 compared to the proposed project.

Groundwater Supplies and Recharge: Under Alternative 5, proposed mining operations and related impacts to groundwater supply wells and the sustainable management of the groundwater basin would be similar at the Plant Site compared to the proposed project (Impact 4.10-8 and 4.10-9). At the Quarry Site, the ultimate depth of mining in the quarry pit would be reduced to 400 feet bgs, thereby reducing the volume of dewatering and ending mining operations and dewatering on the site 14 years sooner than the proposed project.

As shown in Table 6-1, potential groundwater drawdown of adjacent wells without recharge under Alternative 5 would be 65% of the drawdowns from the proposed project (i.e., an estimated 39 feet of drawdown at Well CSA 44C #3 instead of an estimated 60 feet of drawdown prior at the same well prior to application of mitigation). Thus, Alternative 5 would appreciably reduce the number of potentially impacted wells, both with and without recharge, compared to the proposed project and would reduce the potential to impede sustainable management of the groundwater basin (Impacts 4.10-10 and 4.10-11). However, the Quarry Site Groundwater Adaptive Management Program detailed in Mitigation Measures 4.10-10a and 4.10-10b would still be needed to avoid potential impacts to nearby wells. Under both the proposed project and Alternative 5, the use of groundwater recharge trenches along the west side of the Quarry Site and implementation of Mitigation Measures 4.10-10a and 4.10-10b would reduce the potential for surface water from the San Joaquin River to flow into the quarry pit

(Impact 4.10-12). Neither scenario would involve substantial development or otherwise result in substantial new impervious surfaces on the project sites such that recharge of the aquifer would be interrupted (Impact 4.10-13). Overall, impacts to groundwater supplies would be reduced under Alternative 5 compared to the proposed project.

Alteration of Drainage Patterns: Alternative 5, similar to the proposed project, would have minimal potential to result in erosion along the eastern bank of the San Joaquin River and the Operator would still be required to monitor the bank and implement repair measures as required. Both the Quarry Site and the Plant Site have been heavily disturbed and natural drainage patterns altered from past project activities. Under both the proposed project and Alternative 5, continued ground disturbances during mining and reclamation would be similar and there would be minimal potential for erosion or siltation, flooding on or off-site, and interference with flood flows to occur (Impacts 4.10-14 through 4.10-16). Impacts related to the release of pollutants during a flood, tsunami, or seiche would be similar under both scenarios (Impact 4.10-17). Overall, impacts resulting from the alteration of drainage patterns on the project site would be similar under the Reduced Mining Depth (400 Feet) with Reduced Annual Sales Alternative compared to the proposed project.

Land Use and Planning

Neither the proposed project nor Alternative 5 would result in any significant land use impacts. The project sites are not within an established community and the proposed uses are consistent with all applicable land use plans and policies. Therefore, Alternative 5 would have similar impacts related to land use and planning as the proposed project.

Mineral Resources

Under Alternative 5, the reduction in mining depth under this alternative would result in a loss of approximately 21% of recoverable aggregate reserves and a corresponding 14-year reduction in the length of operations from 100 years to 86 years compared to the proposed project. Alternative 5 would have greater impacts on mineral resources as the proposed project.

Noise

Under Alternative 5, proposed annual mining and sales volumes would be reduced from the proposed project. Thus, equipment operation, truck traffic, and blasting schedules and associated noise impacts would be less than those of the proposed project. In addition, mining operations would cease 14 years sooner than under the

proposed project. Therefore, noise impacts under Alternative 5 would be less than those under the proposed project.

Population and Housing

Neither Alternative 5 nor the proposed project would directly or indirectly induce substantial population growth or displace any housing or people. Alternative 5 would have a similar impact on population and housing as the proposed project.

Public Services and Recreation

Neither Alternative 5 nor the proposed project would increase demand for public services or facilities such that new or expanded facilities would be needed. Alternative 5 would have a similar impact on public services and recreation as the proposed project.

Transportation

Neither Alternative 5 nor the proposed project would result in any significant transportation impacts. However, under Alternative 5, there will be fewer trucks trips due to less annual tonnage and mining ceasing 14 years earlier, thus reducing traffic volumes on North Friant Road and in the vicinity of the project site. Thus Alternative 5 would have a lesser impact on transportation as compared to the proposed project.

Tribal Cultural Resources

Due to the lack of consultation requests from local tribes and the highly disturbed condition of the project sites, neither the proposed project nor Alternative 5 would have the potential to disturb tribal cultural resources. Alternative 5 would have similar impacts on tribal cultural resources compared to the proposed project.

Utilities and Service Systems

Neither the proposed project nor Alternative 5 would result in any significant impacts related to utilities and service systems. Thus, Alternative 5 would have a similar impact on utilities and service systems compared to the proposed project.

Wildfire

Under Alternative 5, onsite operations including blasting would remain unchanged resulting in similar wildfire impacts compared to the proposed project. However, due to the reduced total mining depth and reduced annual sales proposed under Alternative 5, operations would cease, and reclamation would be achieved 14 years sooner. Once reclaimed, wildfire risk would be greatly reduced by ceasing blasting and by allowing the quarry pits to fill with water. Therefore, impacts on wildfire under Alternative 5 would be reduced compared to the proposed project.

6.6 COMPARISON OF ALTERNATIVES

The focus of the alternatives analysis in this Draft EIR is to explore options to mitigate or avoid the project's significant impacts. The analysis of each alternative considers whether the alternative would reduce impacts as compared to the project as proposed. In most cases, the alternatives would create the potential for reducing the magnitude, duration, or frequency of certain project impacts, but would not eliminate the impacts entirely.

As presented in Chapter 4, project impacts prior to the application of mitigation measures are identified as significant, potentially significant, or less than significant. Mitigation measures are identified, when available, for significant and potentially significant impacts, and the resulting impacts are found to be either less than significant (when mitigation would reduce a significant or potentially significant impact to below the threshold of significance) or significant and unavoidable (when either no feasible mitigation is available or when available mitigation would not reduce the impact to below the threshold of significance).

Table 6-2, "Alternatives Impact Comparison Summary," provides a summary comparison of the impacts of each alternative with impacts of the proposed project. The table lists each project impact and the significance of the project impact both without mitigation and with mitigation identified in this EIR (if the impact without mitigation is deemed less than significant, no mitigation is needed, and the table simply lists less than significant [LTS]). Table 6-2 also identifies the anticipated comparative impact of each alternative as either having no impact (NI) or an impact greater than (+), similar to (=), or less than (-) the corresponding impact of the proposed project.

Mitigation measures applicable to project impacts for Alternatives 2 through 5 would also be available to reduce commensurate impacts of the alternatives. Thus, in instances where a significant project impact would be reduced to less than significant with mitigation, the same mitigation would also reduce the impact of the alternative to less than significant. However, mitigation measures applicable to the project would not apply to Alternative 1 (No Project) because this alternative involves the implementation of an existing approved permit and reclamation plan that are not subject to further environmental review and new mitigation.

6.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Section 15126.6(e)(2) requires that an EIR identify the environmentally superior alternative. CEQA also requires that if the environmentally superior alternative is the No Project Alternative, the EIR must also identify an environmentally superior alternative from the remaining alternatives. In consideration of the alternatives evaluation presented

above, the Alternative 1: No Project—Reclamation of Existing Conditions Alternative would result in fewer impacts as compared to the project and the other alternatives considered. As such, the County must identify the environmentally superior alternative from the remaining alternatives. Based on the analysis above and excluding the No Project Alternative, the County concludes that Alternative 5, the Reduced Mining Depth (400 Feet) with Reduced Annual Sales (2.5 MTY) Alternative, is the environmentally superior alternative due to reduced impacts to air quality, biology, energy, groundwater quality, groundwater supplies, mineral resources, noise and transportation. The alternatives analysis and conclusions reached regarding the environmentally superior alternative do not determine the ability of Alternative 5 to be an economically feasible option for the Applicant.

Table 6-2
Alternatives Impact Comparison Summary

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
AESTHETICS AND VISUAL RESOURCES						
Impact 4.1-1: Have a substantial adverse effect on a scenic vista.	PS/SU	-	=	=	-	=
Impact 4.1-2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	NI	=	=	=	=	=
Impact 4.1-3: In nonurbanized areas, substantially degrade the existing visual character or quality of public views (i.e., views experienced from publicly accessible vantage points) of the project sites and their surroundings.	PS/SU	-	=	=	-	=
Impact 4.1-4: Creation of a new source of substantial light and glare that would adversely affect day or nighttime views in the vicinity of the project sites.	LTS	-	=	=	=	=
AGRICULTURAL AND FORESTRY RESOURCES						
Impact 4.2-1: Convert prime farmland, unique farmland, or farmland of statewide importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and	NI	NI	NI	NI	NI	NI

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
Monitoring Program of the California Resources Agency, to non-agricultural use.						
Impact 4.2-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract.	NI	NI	NI	NI	NI	NI
Impact 4.2-3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).	NI	NI	NI	NI	NI	NI
Impact 4.2-4: Result in the loss of forest land or conversion of forest land to non-forest use.	NI	NI	NI	NI	NI	NI
Impact 4.2-5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.	LTS	=	=	=	=	=
AIR QUALITY						
Impact 4.3-1: Conflict with or obstruct implementation of the applicable air quality plan.	LTS	-	=	=	=	-

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
Impact 4.3-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standards	PS/LTS	-	-	-	-	-
Impact 4.3-3: Expose sensitive receptors to substantial pollutant concentrations	PS/LTS	-	-	-	-	-
Impact 4.3-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	PS/LTS	-	-	-	-	-
BIOLOGICAL RESOURCES						
Impact 4.4-1: Have an adverse effect, directly or indirectly, on special-status plant or wildlife species on the Plant Site or Quarry Site during mining operations.	PS/LTS	-	-	-	-	-
Impact 4.4-2: Have an adverse effect, directly or indirectly, on special-status wildlife species in riparian habitat surrounding the Plant Site and Quarry Site during mining operations.	LTS	-	-	-	-	-
Impact 4.4-3: Have an adverse effect, directly or indirectly, on special-status plant or wildlife species on the plant site or quarry site after the completion of mining and reclamation.	LTS	-	=	=	=	-

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
Impact 4.4-4: Have a substantial adverse effect on any riparian habitat or other sensitive natural community.	PS/LTS	-	-	-	-	-
Impact 4.4-5: Have an adverse effect on protected wetlands or waters of the state.	LTS	-	=	=	=	-
Impact 4.4-6: Interfere with native resident or migratory fish or wildlife species movement, corridors, or nursery sites.	LTS	-	-	-	-	-
Impact 4.4-7: Conflict with local policies or ordinances protecting biological resources.	PS/LTS	-	=	=	=	-
CULTURAL RESOURCES						
Impact 4.5-1: Substantial adverse change in the significance of a historical resource pursuant to CCR Section 15064.5.	LTS	-	=	=	=	-
Impact 4.5-2: Substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5.	PS/LTS	-	=	=	=	-
Impact 4.5-3: Disturb human remains, including those interred outside of formal cemeteries.	PS/LTS	-	=	=	=	-

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
ENERGY						
Impact 4.6-1: Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.	PS/LTS	-	-	-	-	-
Impact 4.6-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	=	=	=	=	-
GEOLOGY AND SOILS						
Impact 4.7-1: Exposure or people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, as a result of rupture of a known fault.	NI	-	=	=	=	=
Impact 4.7-2: Exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, as a result of strong seismic ground shaking or as a result of seismically induced liquefaction, lateral spreading, or settlement.	LTS	-	=	=	=	=
Impact 4.7-3: Exposure of people or structures to potential substantial adverse effects as result of landslides.	LTS	-	=	=	=	=
Impact 4.7-4: Result in substantial soil erosion	LTS	-	=	=	=	=
Impact 4.7-5: Result in the substantial loss of topsoil.	LTS	-	=	=	=	=

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
Impact 4.7-6: Result in slope instability at the Plant Site.	PS/LTS	-	=	=	=	=
Impact 4.7-7: Result in slope instability at the Quarry Site	PS/LTS	-	=	=	=	=
Impact 4.7-8: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	LTS	-	=	=	=	=
Impact 4.7-9: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	LTS	=	=	=	=	=
Impact 4.7-10: Directly or indirectly destroy a unique geological feature.	NI	NI	NI	NI	NI	NI
Impact 4.7-11: Directly or indirectly destroy a unique paleontological resource.	PS/LTS	-	=	=	=	=
GREENHOUSE GAS EMISSIONS						
Impact 4.8-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	PS/LTS	+	+	+	+	-
Impact 4.8-2: Consistency with applicable GHG plans, policies, or regulations.	LTS	-	+	+	+	-

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
HAZARDS AND HAZARDOUS MATERIALS						
Impact 4.9-1: Create a significant hazard to the public or the environment through the routing transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during construction, relocation, and/or demolition activities.	PS/LTS	-	=	=	=	=
Impact 4.9-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials transported, used, or disposed of during mining or final reclamation.	PS/LTS	-	=	=	=	-
Impact 4.9-3: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials transported, used, or disposed of post-reclamation.	LTS	-	=	=	=	-
Impact 4.9-4: Create a significant hazard to the public or the environment through flyrock generated by the use of blasting agents on the Quarry Site.	PS/LTS	-	=	=	=	-

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
Impact 4.9-5: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LTS	-	=	=	=	-
Impact 4.9-6: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	LTS	-	=	=	=	=
HYDROLOGY AND WATER QUALITY						
Impact 4.10-1: Violate surface water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality at the Plant Site or Quarry Site during mining and reclamation.	PS/LTS	-	=	=	=	-
Impact 4.10-2: Violate surface water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality at the Plant Site after the completion of mining and reclamation.	LTS	-	=	=	=	-
Impact 4.10-3: Violate surface water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality at the Quarry Site after the completion of mining and reclamation.	LTS	-	=	=	=	-

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
Impact 4.10-4: Violate groundwater quality standards or otherwise substantially degrade groundwater quality at the Plant Site due to activities conducted during mining and reclamation.	LTS	-	=	=	=	-
Impact 4.10-5: Violate groundwater quality standards or otherwise substantially degrade groundwater quality at the Plant Site due to the ponding of water in the excavation.	PS/LTS	-	=	=	=	-
Impact 4.10-6: Violate groundwater quality standards or otherwise substantially degrade groundwater quality at the Quarry Site during mining and reclamation.	PS/LTS	-	-	-	-	-
Impact 4.10-7: Violate groundwater quality standards or otherwise substantially degrade groundwater quality at the Quarry Site due to the ponding of water in the excavation.	LTS	-	-	-	-	-
Impact 4.10-8: Substantially decrease groundwater supplies during mining operations and after the completion of reclamation at the Plant Site such that the project could interfere with existing groundwater supply wells.	LTS	-	=	=	=	-

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
Impact 4.10-9: Substantially decrease groundwater supplies during mining operations and after the completion of reclamation at the Plant Site such that the project may impede sustainable groundwater management of the basin.	LTS	-	=	=	=	-
Impact 4.10-10: Substantially decrease groundwater supplies during mining operations and after the completion of reclamation at the Quarry Site such that the project could interfere with existing groundwater supply wells.	PS/LTS	-	-	-	-	-
Impact 4.10-11: Substantially decrease groundwater supplies during mining operations and after the completion of reclamation at the Quarry Site such that the project may impede sustainable groundwater management of the basin.	LTS	-	-	-	-	-
Impact 4.10-12: Substantially decrease groundwater levels in a manner that would result in the flow of substantial volumes of water from the San Joaquin River to the Quarry Site.	PS/LTS	-	=	=	=	-
Impact 4.10-13: Interfere substantially with groundwater recharge at the Plant Site and Quarry Site such that the project may impede sustainable groundwater management of the basin.	LTS	-	=	=	=	-

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
Impact 4.10-14: Alter drainage patterns in a manner which would result in substantial erosion of siltation on or off site.	LTS	-	=	=	=	-
Impact 4.10-15: Alter drainage patterns in a manner which would result in on or off site flooding or exceed the capacity of the existing storm drainage system.	LTS	-	=	=	=	=
Impact 4.10-16: Alter drainage patterns in a manner which would impede or redirect flood flows.	LTS	-	=	=	=	=
Impact 4.10-17: Release of pollutants in flood hazard, tsunami, or seiche zones due to project inundation.	LTS	-	=	=	=	=
LAND USE AND PLANNING						
Impact 4.11-1: Physically divide an established community.	NI	NI	NI	NI	NI	NI
Impact 4.11-2: Conflict with land use plans, policies, and regulations.	LTS	=	=	=	=	=
MINERAL RESOURCES						
Impact 4.12-1: Loss of availability of a known mineral resource or locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	LTS	+	+	+	+	-

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
NOISE						
Impact 4.13-1: Generate a substantial temporary or permanent increase in ambient noise levels from project-generated traffic in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	LTS	-	-	-	-	-
Impact 4.13-2: Generate a substantial temporary or permanent increase in ambient noise levels from Plant Site stage 1 operations in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	PS/LTS	-	-	-	-	-
Impact 4.13-3: Generate a substantial temporary or permanent increase in ambient noise levels from Quarry Site stage 1 and 2 operations and final reclamation in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	PS/LTS	-	-	-	-	-

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
Impact 4.13-4: Generate a substantial temporary or permanent increase in ambient noise levels from Plant Site and Quarry Site final reclamation activities and post-reclamation in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	LTS	-	=	=	=	-
Impact 4.13-5: Generate substantial groundborne vibration or groundborne noise from mining operations and reclamation activities (excluding blasting).	LTS	-	-	-	-	-
Impact 4.13-6: Generate substantial groundborne vibration or airborne vibration as a result of blasting.	PS/LTS	-	-	-	-	-
POPULATION AND HOUSING						
Impact 4.14-1: Induce substantial unplanned population growth in an area, either directly or indirectly.	LTS	=	=	=	=	=
Impact 4.14-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.	NI	NI	NI	NI	NI	NI

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
PUBLIC SERVICES						
Impact 4.15-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, law enforcement, schools, parks, other public facilities.	LTS	-	=	=	=	=
RECREATION						
Impact 4.16-1: Increase use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LTS	=	=	=	=	=
Impact 4.16-2: Inclusion of recreational facilities or requiring the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	LTS	=	=	=	=	=

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
TRANSPORTATION						
Impact 4.17-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	PS/SU	-	-	-	-	-
Impact 4.17-2: Conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).	LTS	-	-	-	-	-
Impact 4.17-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	=	=	=	=	-
Impact 4.17-4: Result in inadequate emergency access.	LTS	=	=	=	=	-
TRIBAL CULTURAL RESOURCES						
Impact 4.18-1: Substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or by the lead agency pursuant to criteria set forth in Public Resources Code Section 5024.1(c).	PS/LTS	-	=	=	=	=

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
UTILITIES AND SERVICE SYSTEMS						
Impact 4.19-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	NI	NI	NI	NI	NI	NI
Impact 4.19-2: Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	LTS	-	=	=	=	=
Impact 4.19-3: Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, otherwise impair the attainment of solid waste reduction goals, or conflict with federal, state, and local management and reduction statutes and regulations related to solid waste.	LTS	-	=	=	=	=
WILDFIRE						
Impact: 4.20-1: Substantial Impairment of an Adopted Emergency Response Plan or Emergency Evacuation Plan.	LTS	-	=	=	=	=

Impact	Project Impact Significance without/with Mitigation[1]	Alternatives				
		1 No Project	*2 Reduced Mining Depth (400 Ft)*	*3 Reduced Mining Depth (300 Ft)*	*4 Reduced Mining Depth (300 Ft) with Additional Setbacks*	*5 Reduced Mining Depth (400 Ft) with Reduced Annual Sales (2.5 MTY)*
Impact: 4.20-2: Exacerbation of Wildfire Risks Due to Slope, Prevailing Winds, and Other Factors, that Could Thereby Expose Project Occupants to Pollutant Concentrations from a Wildfire or the Uncontrolled Spread of a Wildfire.	PS/LTS	-	-	-	-	=
Impact: 4.20-3: Installation or Maintenance of Associated Infrastructure (Such as Roads, Fuel Breaks, Emergency Water Sources, Power Lines or Other Utilities) That May Exacerbate Fire Risk or That May Result in Temporary or Ongoing Impacts to the Environment.	LTS	-	=	=	=	=
Impact: 4.20-4: Exposure of People or Structures to Significant Risks, Including Downslope or Downstream Flooding or Landslides, as a Result of Runoff, Post-Fire Slope Instability, or Drainage Changes.	LTS	-	-	-	-	=

Notes:

1. Project Impact Significance Without/With Mitigation: S = Significant; PS = Potentially Significant; LTS = Less than Significant; SU = Significant and Unavoidable.
2. Alternative 1: No Project—Implementation of the Approved Reclamation Plan Alternative; Alternative 2: Prohibited Nighttime Reclamation Alternative; Alternative 3: In-kind Replacement for Protected Oaks Alternative.
3. Comparative Impacts of Alternatives: "-"(Impact is less than the project); "+" (Impact is greater than the project); "=" (Impact is similar to the project); "NI" = No Impact. Comparative notations with differing impacts with and without mitigation implementation are designated with "/" between notations. E.g., "=/+" means the alternative would have similar impacts as the unmitigated proposed project and greater impacts than the mitigated proposed project. "-/=" means the alternative would have fewer impacts than the unmitigated proposed project and similar impacts to the mitigated proposed project.

7—OTHER CEQA TOPICS

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7.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires the consideration of a range of issues extending beyond analysis of project-specific impacts. This section of the draft environmental impact report (Draft EIR) contains analysis of the following additional CEQA-mandated discussions:

- significant unavoidable adverse impacts (Section 15126. 2[c])
- irreversible/irretrievable commitment of resources (Section 15126.2[d])
- growth-inducing impacts (Section 15126.2[e])

7.2 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

CEQA Guidelines Section 15126.2(c) requires that the EIR discuss significant environmental effects that cannot be avoided if the project is implemented, even with mitigation incorporated. According to Guidelines Section 15126(c):

> Describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.

This EIR identifies significant environmental effects that cannot be avoided if the project is implemented. As discussed in greater length in Section 2.1, "Introduction," of Chapter 2, "Project Description," of this Draft EIR, if the County decides to approve this project, the County will adopt a Statement of Overriding Considerations that explains the County's rationale as to why they approved the project notwithstanding the identified significant environmental effects that cannot be avoided, which are summarized below.

Table ES-2, "Summary of Project Impacts and Mitigation Measures," provides a summary of the project potential environmental impacts identified and evaluated in the Draft EIR, presents mitigation measures identified in the Draft EIR, and lists the impact significance both without and with mitigation applied. The following impacts were found to be significant and unavoidable, as feasible mitigation is either unavailable or would not effectively reduce the severity of the impact to less than significant:

- Impact 4.1-1: Have a Substantial Adverse Effect on a Scenic Vista.
- Impact 4.1-3: In Nonurbanized Areas, Substantially Degrade the Existing Visual Character or Quality of Public Views (i.e., Views Experienced from Publicly Accessible Vantage Points) of the Project Sites and their Surroundings.
- Impact 4.17-1: Conflict with a Program, Plan, Ordinance, or Policy Addressing the Circulation System, including Transit, Roadway, Bicycle, and Pedestrian Facilities.

The analysis also determined that the project would not make a significant and unavoidable cumulatively considerable contribution to any significant cumulative impacts (see Chapter 5, "Cumulative Impacts," of this Draft EIR).

7.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD BE CAUSED BY THE PROJECT SHOULD IT BE IMPLEMENTED

Public Resources Code Section 21100(b)(2)(B) and CEQA Guidelines Section 15126.2(c) require that the EIR discuss significant irreversible environmental changes that would be caused by the project should it be implemented. According to Guidelines Section 15126(d):

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

7.3.1 Mineral Resources

The project sites are located within an area designated by the state and county as Mineral Resource Zone 2 (MRZ-2). MRZ-2 zones are areas where adequate information indicates that significant mineral deposits are present, or where it is judged that there is a high likelihood of their presence. Fresno County incorporated the MRZ-2 classification into the Mineral Resources Unit of the Open Space/Conservation Element of its General Plan. The State of California designated the project sites as having construction grade aggregate deposits that are of regional significance.

The proposed project involves expanding the quantity of aggregate mined and processed at the existing Plant Site and Quarry in order to fully utilize this mineral resource, which

is considered to be a non-renewable resource, to meet the needs of the Fresno region. Although such use would result in the irretrievable commitment of mineral resources, the demand for aggregate associated with regional construction projects would exist with or without the project.

7.3.2 Other Irreversible Changes

Approval and implementation of the proposed project would result in an irreversible commitment of nonrenewable resources needed for the continuation of mining, construction, operation, and relocation of processing facilities, aggregate and other materials hauling activities, and final reclamation activities. Nonrenewable and limited resources consumed during project operation would include, but would not be limited to, diesel fuel, gasoline, oil, natural gas, and electricity (to the extent electricity used by the proposed project may be produced from non-renewable resources). (Additional discussion of project energy consumption is provided in Section 4.6, "Energy," of this Draft EIR.) The proposed project would also require the consumption of San Joaquin River water and groundwater. The consumption of these water resources would also be irreversible.

Environmental changes associated with implementation of the proposed project would result in alterations of the physical environment. The project site would be reclaimed to open space, and riparian and open water wildlife habitat. Due to the formation of quarry pit ponds that would cover the majority of both the Plant Site and Quarry Site, other future land uses would generally be precluded. Physical environmental impacts that could occur as a result of the proposed project are presented in Sections 4.1 through 4.20 of this Draft EIR. Project compliance with applicable regulatory requirements and implementation of mitigation measures identified in this Draft EIR would reduce the likelihood of irreversible damage from physical environmental impacts that could occur during project operational and reclamation activities.

7.3.3 Conclusions Regarding Irreversible Environmental Changes

The development of the proposed project is in direct response to the region's growing population and building industry. In other words, growth would occur whether or not the proposed project is implemented. Aggregate deposits will be mined to provide the needed construction-grade aggregate. Energy supplies would be used for mining activities, transportation of products and mineral resources, as well as other energy associated needs related to processing the material. Surface and groundwater supplies would be consumed directly (through use by the mining operation) and indirectly (through loss by evapotranspiration in the onsite ponds). The commitment of resources and the levels of consumption associated with the proposed project are consistent with

this anticipated regional growth. Therefore, there is no particular justification for avoiding or delaying the continued commitment of these resources.

7.4 GROWTH INDUCING ANALYSIS OVERVIEW

7.4.1 Introduction to Growth Inducement Assessment

CEQA Guidelines Section 15126.2(e) requires that the scope of the analysis "discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Direct growth inducing impacts occur when a project imposes new burdens on a community by directly inducing population growth, or by leading to the construction of additional developments in the same area. Indirect growth could be associated with project activities that remove physical obstacles to population growth, such as installation of transportation or utility infrastructure with excess capacity available to serve additional growth.

This section discusses whether the proposed project would foster economic growth or population growth in the surrounding area. Issues considered include assessing whether the project would result in:

- urbanization of land in a remote location, creating an intervening area of open space which then experiences pressure to be developed;
- removal of an impediment to growth through the establishment of an essential public service or the provision of new access to an area;
- economic expansion, population growth or the construction of additional housing occurs in the surrounding environment in response to economic characteristics of the project; and
- establish a precedent-setting action, such as a change in zoning or general plan amendment approval that makes it easier for future projects to gain approval.

Should the proposed project meet any one of these criteria, it is to be considered growth-inducing. However, it is also important to note that CEQA Guidelines Section 15126.2 states that growth in an area is not necessarily beneficial, detrimental or of little significance to the environment.

7.4.2 Urbanization of Land in Isolated Localities

The proposed project does not involve any new residential structures, urbanization, other land development or increased access to parcels that may be developed. The proposed project would continue mining and processing operations on the Plant Site and Quarry Site; add aggregate processing and/or production facilities to both project sites; increase

the permitted aggregate production and sales volume as compared to the existing operations; and expand recycling operations by adding the import and recycling of concrete debris and asphalt debris to existing come-back concrete recycling operations. The proposed project would add approximately 5 additional full-time employees. It is anticipated that the employees would be retained from the local labor pool and therefore the jobs created by the proposed project would not create an increased demand for housing. For these reasons, the proposed project would not be growth-inducing under this criterion.

7.4.3 Removal of an Impediment to Growth

The proposed project would not result in the construction of public roads or installation of other infrastructure that would remove an existing barrier to growth or development in the area. The proposed project would extend the life of an existing aggregate processing facility serving Fresno and Madera counties. The proposed project would continue to provide aggregate resources that would be used in these areas for construction. However, the proposed project is not and would not be the only source of construction aggregate in the region (the s of other aggregate mines are shown on Figure 4.17-2, "Active, Inactive, and Permitted Aggregate Mines in the Fresno-Madera Production Consumption Region," of Section 4.17, "Transportation," of this Draft EIR) and would not remove a barrier to development associated with the availability of construction aggregate. Thus, the proposed project is not considered growth-inducing under this criterion.

7.4.4 Economic Growth

The proposed project would not directly result in the construction of any homes or facilities that would attract people to the area and therefore would not result in population growth. The proposed project may generate increased revenue, including income tax revenue, associated with increased aggregate sales, recycled concrete and asphalt, and full-time employment of 5 additional full-time employees. However, the potential increase in revenue-generating potential is not considered to have a direct relationship with, or potential make a substantial contribution to, regional economic growth.

7.4.5 Precedent Setting Action

The proposed project would not result in a precedent-setting action such as a General Plan Amendment or change in zoning that could induce other similar changes leading to potential growth. Therefore, the proposed project would not be growth-inducing under this criterion.

7.4.6 Conclusions Regarding Growth Inducement

As concluded in the discussions above, the proposed project is not considered growth-inducing and would therefore not result in potential environmental effects associated with induced growth.

8—LIST OF PREPARERS

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"Executive Summary"

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10—ACRONYMS AND GLOSSARY

µg	micrograms
µm	micrometers
µg/L	micrograms per liter
µmhos/cm	micromhos per centimeter
AADT	annual average daily trips
AB	assembly bill
AC	asphaltic concrete
ADF&G	Alaska Department of Fish and Game
AE-20	Exclusive Agriculture, 20-acre minimum parcel size zoning designation
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
Air District	San Joaquin Valley Air Pollution Control District
ANSI	American National Standards Institute
APN	assessor's parcel number
ARB	California Air Resources Board
ATCM	Airborne Toxic Control Measure
ATP	active transportation plan
BACT	best available control technology
bgs	below ground surface
BIOS	Biogeographic Information and Observation System
BLM	Bureau of Land Management
BMPs	best management practices
BO	biological opinion
BRA	Biological Resources Assessment

BTU	British thermal unit
C	Celsius
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAFE	corporate average fuel economy
CAIT	Climate Analysis Indicators Tool
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARE	California Air Risk Evaluation Program
CCAA	California Clean Air Act of 1988
CCAR	California Climate Action Registry
CCR	California Code of Regulations
CDFG	California Department of Fish and Game (former)
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	White House Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act

CEMEX	CEMEX Construction Materials Pacific, LLC
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historical Resources Information System
ClWMB	California Integrated Waste Management Board
CMB	crushed miscellaneous base
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	community noise exposure level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2E	carbon dioxide equivalent
COG	council of governments
County	Fresno County
CPF	cancer potency factor
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSA	community service area
CUP	conditional use permit
CUPA	Certified Unified Program Agency
CV-SALTS	Central Valley Salinity Alternatives for Long-Term Sustainability

CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels
DBH	trunk diameter at breast height
DBCP	dibromochloropropane
DDT	Dichlorodiphenyltrichloroethane
DO	dissolved oxygen
DOC	California Department of Conservation
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DSoD	California Department of Water Resources Division of Dam Safety
DWR	California Department of Water Resources
EIA	United States Energy Information Administration
EIR	environmental impact report
EISA	Energy Independence and Security Act of 2007
EPA	U.S. Environmental Protection Agency
°F	Fahrenheit
FAM	financial assurance mechanism
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FESOP	Federally Enforceable State Operating Permit
FHA	Federal Highway Administration
FICON	Federal Interagency Commission on Noise
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRM	flood insurance rate map

FMMP	Farmland Mapping and Monitoring Program
FPA	Forest Practice Act
fps	feet per second
FTA	Federal Transit Administration
GHG	greenhouse gases
GIS	geographic information system
gpd/ft	gallons per day per foot
gpd/ft^2	gallons per day per square foot
gpm	gallons per minute
GPS	Global Positioning System
gr/dscf	grains per dry standard cubic foot of gas
GSA	groundwater sustainability agency
GVWR	Gross Vehicle Weight Rating
GWP	global warming potential
H_2O	water vapor
HCD	California Department of Housing and Community Development
HCP	Habitat Conservation Plan
HDPE	High-density polyethylene
HFCs	Hydrofluorocarbons
HI	hazard index
HMA	hot mix asphalt
HMBP	hazardous materials business plan
hp	horsepower
HRA	health risk assessment
HSWA	Hazardous and Solid Waste Amendments

HUD	United States Department of Housing and Urban Development
HWCL	Hazardous Waste Control Law
Hz	hertz
IAQ	Indoor Air Quality
IDA	International Dark-Sky Association
IEPR	Integrated Energy Policy Report
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
KOP	key observation point
kWh	kilowatt hours
lbs	pounds
LAMP	local area management plan
LCFS	Low Carbon Fuel Standard
LDAMDV	light duty auto – medium duty vehicle
Ldn	day-night average noise level
Leq	equivalent noise level
LOS	level of service
LUP	land use permit
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Levels
MEIR	maximum exposed individual sensitive receptor
MEIW	maximum exposed individual off-site worker
mg/L	milligrams per liter
mg/m^3	milligrams per cubic meter

MLD	Most Likely Descendent
MMBtu/hr	million British thermal units per hour
MMRP	mitigation monitoring and reporting program
MMT	million metric tons
$MMTCO_2E$	million metric tons of CO2E
mph	miles per hour
MPO	Metropolitan Planning Organizations
MRP	monitoring and reporting program
MRZs	Mineral Resource Zones
msl	above mean sea level
MT	million tons
Mt.	Mount
MTBE	methyl tertiary butylether
MTY	million tons per year
MW	megawatt
MW	monitoring well
Mw	moment magnitude
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NAS	National Academy of Sciences
NCAR	National Center for Atmospheric Research
NCCP	Natural Community Conservation Plan
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act

NF_3	nitrogen trifluoride
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NOA	notice of availability
NOAA	National Oceanic and Atmospheric Administration
NOC	notice of completion
NOP	notice of preparation
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	National Society of Professional Surveyors
NWPR	Navigable Waters Protection Rule
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Governor's Office of Planning and Research
ORP	oxidation-reduction potential
OSHA	Occupational Health and Safety Act
OSMRE	Office of Surface Mining Reclamation and Enforcement
OWTS	Onsite Wastewater Treatment Systems
P&O	prioritization and optimization
PCB	polychlorinated biphenyl
PCC	Portland Cement Concrete

PCE	Primary Constituent Elements
pCi/L	picoCuries per liter
PDA	Priority Development Areas
PFCs	perfluorocarbons
PG&E	Pacific Gas and Electric Company
pH	potential of hydrogen
PM_{10}	respirable particulate matter
$PM_{2.5}$	particulate matter
PMI	point of maximum impact
pou	publicly owned utilities
ppm	parts per million
ppmv	parts per million volume
PPV	peak particle velocity
PRC	Public Resources Code
PSD	prevention of significant deterioration
R	Range
RACT	Reasonably Available Control Technology
RAP	recycled asphalt product
RCIS	Regional Conservation Investment Strategy
RCNM	Roadway Construction Noise Model
RCRA	Resource Recovery and Conservation Act
REL	reference exposure level
RFS	Renewable Fuel Standard
RHNA	Regional Housing Needs Assessment
RMS	root mean square

ROAR	Responsible Official Affirmation of Reporting
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RTAC	Regional Targets Advisory Committee
RTP	Regional Transit Plan
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient
SARA	Superfund Amendments and Reauthorize Act
SB	Senate Bill
SCS	sustainable communities strategy
SF_6	hexafluoride
SGMA	Sustainable Groundwater Management Act
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SJRC	San Joaquin River Conservancy
SMARA	Surface Mining and Reclamation Act
SMRP	Surface Mining and Reclamation Plan
SNMP	Salt and Nitrate Management Plan
SOx	oxides of sulfur
SOI	sphere of influence
SO_2	sulfur dioxide
SPCC	Spill Prevention Control and Countermeasure
SR	state route
SRRE	source reduction and recycling element

SSJVIC	Southern San Joaquin Valley Information Center
SVP	Society of Vertebrate Paleontologists
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T	township
TACs	toxic air contaminants
TCP	trichloropropane
TIZ	traffic impact zone
TDS	total dissolved solids
TMDL	Total maximum Daily Load
TPF	tree protection fencing
tpy	tons per year
TSCA	Toxic Substances Control Act
UCMP	UC Berkeley Museum of Paleontology
USDA	United States Department of Agriculture
USACOE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
VdB	vibration decibels
VDE	visible dust emissions
VDECS	Verified Diesel Emission Control Strategies
VERA	Voluntary Emission Reduction Agreement
VOCs	Volatile Organic Compounds
VMT	vehicle-miles traveled

WCI	Western Regional Climate Action Initiative
WDR	waste discharge requirement
WRCC	Western Regional Climate Center
yr	year
ZEV	zero emission vehicle

BENCHMARK RESOURCES

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