Draft

SARGENT RANCH QUARRY

Environmental Impact Report
SCH # 2016072058

Prepared by
County of Santa Clara
With Technical Assistance by: ESA

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SUMMARY

S.1 Project Summary

S.1.1 Introduction

This summary chapter provides an overview of the Sargent Ranch Quarry Project (Project), which is described in detail in Chapter 2, *Project Description*, and the conclusions of the environmental analysis, provided in detail in Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*. This chapter also summarizes the alternatives to the Project that are discussed in Chapter 4, *Alternatives*, and identifies the Environmentally Superior Alternative. Table S-1, Summary of Impacts and Mitigation Measures, at the end of this Summary, provides a summary of the environmental effects of the Project identified in each technical issue section of Chapter 3. The table consists of the environmental impacts, the significance of the impact, proposed mitigation, if any, and the significance of the impact after the mitigation measure is implemented. Table S-2, Summary Comparison of Alternatives to the Project, provides a summary of the relative severity of the impacts of the alternatives.

S.1.2 Project Location

The 5,154-acre Sargent Ranch property is located within an unincorporated area of southern Santa Clara County, approximately four miles south of the City of Gilroy, California. The approximately 403-acre area where mining and related activities are proposed is located on the eastern portion of Sargent Ranch (see Figures 2-1 through 2-3 in Chapter 2, *Project Description)*.

S.1.3 Summary of Project Description

Introduction

Sargent Ranch Partners, LLC (Applicant) proposes to develop a sand and gravel surface mining operation called the Sargent Ranch Quarry Project (Project) on an approximately 403-acre site located in Santa Clara County (Project site). The Project consists of the development of a sand and gravel mining operation on approximately 298 acres within the Sargent Ranch property, which currently is used for cattle ranching. The remaining 105 acres of the 403-acre Project site would be designated as a “geotechnical setback area” that would buffer excavation areas from surrounding uses and that could be used if needed to allow more slope layback[1] to increase slope stability or provide a buffer area in the case of unforeseen slope failure. Mining operations would be conducted for 30 years, in four phases as described below. Over the 30-year period, portions of the

[1] “Slope layback” is a term for grading the final slope at a less steep angle. For example, a 4:1 (horizontal to vertical) slope rather than a 3:1 slope.

site would be reclaimed upon completion of each phase of the quarry operation. At the end of the Project's life, final reclamation of the last surface mining phase would occur, and the aggregate processing facility site would also be reclaimed.

The Santa Clara County Zoning Code requires the issuance of a Use Permit for surface mining projects and approval of a site-specific Reclamation Plan and Financial Assurance Cost Estimate (Section 4.10.370 – Surface Mining, subsections (E), (F), and (K)) in accordance with the State of California Surface Mining and Reclamation Act (SMARA) (Public Resources Code Section 2710 et seq.; 14 Cal. Code Regs. Section 3500 et seq.). SMARA was enacted to help mitigate environmental impacts from mining by ensuring that mined lands are reclaimed to a usable condition.

Surface mining activities and implementation of the Reclamation Plan for the Project would be needed to satisfy requirements of both SMARA and the County of Santa Clara's (County's) Surface Mining requirements (County Zoning Code Section 4.10.370). The surface mining operation would process sand and gravel Monday through Saturday from 6:00 a.m. to 5:00 p.m., and sales (including transport off-site) would occur from 4:30 a.m. to 4:00 p.m. Because these proposed hours of operation would extend beyond the standards for Surface Mining operation allowed by the County Zoning Ordinance (4.10.370 Part II, A (1)), Planning Commission approval of a deviation from the standard hours of operation would be required.

Project Objectives

The fundamental underlying purpose of the Project is to develop a feasible source of aggregate in close proximity to the Bay Area to meet regional demand for construction sand. The Project objectives are as follows:

1. Develop a long-term source of high-quality aggregate needed for various uses in the County and other local markets, in furtherance of General Plan Policy R-RC 68.
2. Ensure that mining occurs in an environmentally responsible and sensitive manner that is consistent with the California Surface Mining and Reclamation Act and County requirements.
3. Locate the source of aggregate in proximity to one or more major transportation corridors and in proximity to local construction contractors and others in need of such materials, who otherwise might have to seek and transport such materials from more distant sources.
4. In furtherance of General Plan Policy R-RC 78, provide an alternative to truck transport of construction aggregates by using the Union Pacific Railroad rail spur adjacent to Sargent Ranch to replace haul trucks to the extent feasible.
5. Develop the aggregate resource in a manner that is economically feasible.
6. Minimize impacts on sensitive natural and cultural resources on the Project site.
7. Minimize aesthetic impacts through site design, phasing, and concurrent reclamation.
8. Implement a reclamation plan that provides for long-term slope stability, prevents wind and water erosion, and establishes self-sustaining native and naturalized vegetation cover.

Project Components

Open-pit mining would occur in four areas (Phases 1 through 4) within the Project site (see Figure 2-4, *Mining Site Plan*, in Chapter 2). Construction of the structures, conveyor belt and roads to access Phases 1 and 2, acceleration lane improvements, and related facilities would occur over nine months (157 construction days) prior to the start of surface mining activities. All of the facilities within the processing area, including the aggregate processing plant, office/scale house, process water pond, and stormwater basins, would be constructed during this period. Initially, a temporary processing plant would be constructed. Additional improvements would include the access/maintenance roads, a free-span bridge over Tar Creek, and a new groundwater well. After completion of Phase 2 mining, a conveyer belt connecting Phases 3 and 4 to the processing area and a parallel maintenance road, including a crossing at Sargent Creek, would be constructed. These facilities and related construction activities are described in more detail in Chapter 2, Project Description.

After the Project facilities are in place, mining would commence at the Phase 1 quarry. At the commencement of mining within each phase, the topsoil and overburden would be removed and stored separately in the processing area. Temporary stockpiles would be located within the individual quarry areas. A permanent overburden stockpile area would be placed between the processing plant and Phase 1 and Phase 2 mining areas. This area would receive materials during Phases 1, 2, and 3.

In general, excavation to remove topsoil and overburden would be conducted during the dry season (April 16 through October 14). If excavation occurs in the wet season, appropriate best management practices (BMPs) would be used to control erosion.

Hill slopes within the designated quarry pits would be cut back to expose sand and gravel deposits. This product would be excavated and transported from the quarry pits to the processing plant via conveyer belt. In general, an open pit would be developed with 2:1 (i.e., 2 feet horizontal for every vertical foot) or flatter side walls with 10-foot-wide benches every 40 vertical feet. Each bench would have a longitudinal grade of four to 12 percent. All materials would be processed at the aggregate plant on-site. After processing, finished products would be sold and transported off-site via truck or rail. As slopes within each quarry pit are finished, they would be reclaimed while mining would continue on other slopes within the pit. Each phase would be fully reclaimed upon completion of mining activities within that phase (see reclamation description in Section 2.6). The final reclaimed fill slopes would have varying gradients of 3:1 or flatter.

Approximately 35 million cubic yards (cy) of material would be excavated over the 30-year life of the Project. Of this, it is estimated that a total volume of approximately 25.3 million cy would be saleable sand and gravel aggregate (product). This would equate to a total weight of approximately 38 million tons of product (assuming 1.5 tons per cy). Product consisting of mined sand and gravel aggregate would be sold to the local market for a variety of construction-related uses. Overburden and/or mined material that is not salable as concrete-grade aggregate would be stockpiled on-site. Up to 20 percent of overburden could be sold as engineered fill for construction projects throughout the life of the Project; the portion not sold would be used in the final reclamation of quarry slopes at the conclusion of each mining phase, as described further below.

“Geotechnical setback” areas have been identified surrounding each mining area. These setback areas would be used as a buffer area if needed to allow more slope layback to increase slope stability and/or allow a buffer area in the case of slope failure.

An earthen berm would be constructed between U.S. 101 and the processing plant to screen views of the facilities from the highway. The berm would be approximately 40 feet tall and constructed from overburden taken from Phase 1. Other facilities to be constructed include a vehicular bridge across Tar Creek to provide access to the Project site, drainage facilities, and roads.

The maximum area of potential disturbance would be approximately 403 acres. Ground disturbance includes grading, excavation, and other earthwork, and does not include areas that would only have vegetation mowed (e.g., fuel modification zones around access roads). This includes the 105 acres of geotechnical setback areas (described in more detail below), which may not all be disturbed (i.e., would be used as needed). Disturbance areas for each phase and associated facilities are summarized in Table 2-1 in Chapter 2.

Estimated total mining and excavation quantities for each phase of the Project are shown in Table 2-2 in Chapter 2. Approximately 35 million cy of native materials would be excavated over the life of the Project, including 25,305,000 cy or 38 million tons of product (assuming 1.5 tons per cy). Over the life of the Project, approximately 846,000 cy of topsoil and 8,865,000 cy of overburden would be excavated. The aggregate would be composed of 60 percent sand, 20 percent gravel, and 20 percent clay. The rate of surface mining and mineral extraction would vary from day to day and year to year depending on demand, site conditions and other factors, such as weather. In the initial five years of operation, the maximum amount of product that would be produced in a single day would be 2,500 tons. At full operational capacity, the mining operation could produce a maximum of 6,000 tons of product in a single 10-hour day. Actual amounts would be less on some days, but would not exceed 6,000 tons per day on any day. The maximum amount of product that would be produced in a single year is 1,860,000 tons.

The duration of each phase would depend on market demand for sand and gravel materials. A tentative schedule for construction, mining, and reclamation is shown in Table 2-3 in Chapter 2. Surface mining at the Phase 1 and Phase 2 pit areas would be complete in approximately 10 to 13 years, respectively. At maximum production levels, Phase 3 would be completed in approximately 4 years, and Phase 4 would require two years to complete. As noted above, the actual timelines could vary, although the total amount of material to be mined would not exceed the maximum identified amounts in any single year.

Project product would be transported to customers using both haul trucks and rail. Vehicle and truck access, including emergency access, to and from the Sargent Ranch Quarry would occur via U.S. 101, as shown on Figure 2-11 in Chapter 2. Access to the Project site from the north would occur via southbound U.S. 101 and Old Monterey Road through a gated entrance to an existing private access road. Trucks leaving the site traveling to destinations south of the quarry would exit onto Old Monterey Road and then onto southbound U.S. 101 via an existing acceleration lane. Trucks traveling to destinations north of the quarry would use the Sargent Ranch undercrossing of U.S. 101.

To facilitate truck access, an existing U.S. 101 on-ramp east of the Project site would be improved prior to the start of mining to include a 12-foot-wide, 0.25-mile-long acceleration lane for trucks accessing northbound U.S. 101. This on-ramp would require an encroachment permit from Caltrans and would be built according to Caltrans specifications. Other access improvements would include a free-span bridge over Tar Creek and new pavement overlaid on Old Monterey Road.

Rail tracks are located to the east of Sargent Ranch along U.S. 101. As part of the Project, a rail spur would be constructed within the processing plant area. The spur would accommodate up to 16 rail cars. Rail cars would be picked up by Union Pacific Railroad trains up to three times per week.

After mining is complete, the Project site would be reclaimed as described in the Reclamation Plan (Appendix B). The proposed reclamation generally involves equipment and building removal, regrading, re-soiling, drainage and erosion control, and revegetation. Some of these activities may occur simultaneously. Reclamation would include the use of overburden to fill quarry pits to elevations to levels at or below the immediately surrounding grades, recontouring of the surface of mined and processing plant areas, installation of erosion and stormwater control features, redistribution of topsoil, and revegetation. The site topography would ultimately be contoured to create a safe condition for cattle grazing. Upon completion of all reclamation activities, the Project site would be returned to cattle grazing and/or be retained as open space

S.2 Overview of Project Impacts

S.2.1 No Impact

There are several issue areas raised in Chapter 3 that would not have any impacts under the Project. For example, there are no known forestry resources within the Project Site, so construction and operation of the Project would not affect the availability of forests or forestry resources. The Project would have no impacts within any of the following resource areas:

- Agriculture and Forestry Resources
- Land Use and Planning
- Population and Housing
- Public Services
- Recreation

S.2.2 Less-than-Significant Impacts

Some impacts that would occur under the Project would be adverse, but not severe enough to warrant mitigation. The Project would have a less-than-significant impacts in the following areas:

- Aesthetics (light and glare)
- Biological Resources (habitat for the Bay checkerspot butterfly and rare serpentine-associated plants located off-site)
- Air Quality (toxic air contaminants; odors)

- Energy
- Geology, Soils, and Paleontology (seismic events; erosion and loss of topsoil; onsite wastewater treatment)
- Hazards and Hazardous Materials (routine transportation, use and disposal of hazardous materials)
- Hydrology and Water Quality (degradation of surface water quality; groundwater supply, production, quality and management; stormwater drainage and flooding)
- Mineral Resources
- Noise (construction, operational and transportation noise)
- Transportation (conflict with policies related to transit, roadway, bicycle, and pedestrian facilities)
- Utilities and Service Systems (water supply and solid waste)
- Wildfire

S.2.3 Less-than-Significant Impacts with Mitigation Incorporated

Under CEQA, a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (CEQA Guidelines Section 15382). Based on the analysis contained in this EIR, implementation of the Project could result in significant impacts in the following areas:

- **Biological Resources**: Impacts on the following special-status species and/or their habitat: special-status plant species, special-status fish, California red-legged frogs (CRLF), California tiger salamanders (CTS), western pond turtles, burrowing owls, tricolored blackbirds, raptors and other protected birds, special-status bats, mountain lions, San Francisco dusky-footed woodrats, American badgers; adverse effects on jurisdictional wetlands and other waters; and conflicts with County ordinances and policies intended to protect biological resources, including oak woodlands.
- **Cultural and Tribal Cultural Resources**: Adverse impacts on known historical or archaeological resources; damage to unrecorded subsurface prehistoric and historic archaeological resources; disturbance of human remains.
- **Geology, Soils, and Paleontology**: Increased potential for slope instability and slope failure.
- **Greenhouse Gas Emissions**: Generate greenhouse gas emissions (GHG); conflict with applicable GHG plans, policies, or regulations.
- **Hazards and Hazardous Materials:** Accidental release of existing soil contaminants, such as historic pesticide residues.
- **Hydrology and Water Quality**: Substantially degrade surface or groundwater quality.
- **Transportation**: Roadway hazards due to the presence of large construction trucks, temporary lane closures and detours; inadequate emergency access.

If an impact is determined to be significant, applicable mitigation measures are identified as appropriate. These mitigation measures are also summarized in Table S-1. The mitigation measures presented in the EIR will form the basis of the Mitigation Monitoring Program. Except for the impacts listed below under S.2.4, all of the potentially significant impacts could be reduced to a less-than-significant level through mitigation measures identified in this EIR. An impact that remains significant after mitigation is considered an unavoidable adverse impact of the Project.

S.2.4 Significant and Unavoidable Impacts

Section 15126.2(a) of the CEQA Guidelines requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. The following significant and unavoidable impacts would result from the Project.

1. **Aesthetics**: The Project would have a significant and unavoidable impact, both at the Project-specific level and cumulatively, with regard to its effect on existing visual character or quality of public views of the site and its surroundings from U.S. 101, a County-designated scenic highway (Impact 3.2-1). Mitigation Measure 3.2-1 would lessen the severity of these impacts but not below the level of significance.). This significant unavoidable impact would also be cumulatively significant and unavoidable (Impact 3.2-3).

2. **Air Quality**: The Project would have a significant and unavoidable impact with regard to its effect on BAAQMD NO_x thresholds and emissions of NO_x, ROG, $PM_{2.5}$, and PM_{10} for which the region is in nonattainment status. Mitigation Measures 3.3-2a and 3.3-2b would reduce NO_x thresholds but emissions of NO_x would not be reduced below significance thresholds for project-specific or cumulative impacts (Impacts 3.3-1, 3.3-2 and 3.3-5). This significant unavoidable impact would also be cumulatively significant and unavoidable (Impact 3.3-5).

3. **Biological Resources**: The Project would have a significant and unavoidable impact with regard to the Project's interference with wildlife movement (Impact 3.4-15). Mitigation Measure 3.4-15 would reduce this impact but not below the thresholds of significance. This significant unavoidable impact would also be cumulatively significant and unavoidable (Impact 3.4-22).

4. **Cultural and Tribal Cultural Resources**: The Project would have a significant and unavoidable impact both at the Project-specific level and cumulatively with regard to changes in the significance of tribal cultural resources within the proposed area of development, and the Juristac Tribal Cultural Landscape (Impacts 3.5-4,3.5-5, and 3.5-9). Mitigation Measures 3.5-1, 3.5-3b, 3.5-4b and 3.5-5b would reduce the severity of these impacts, but not to a less-than-significant level.

5. **Geology, Soils, and Paleontology**: The Project would have a significant and unavoidable impact with regard to the Project's potential to destroy paleontological resources important to Santa Clara County (Impact 3.7-5). Mitigation Measure 3.7-5 would not reduce impacts to a level of insignificance. This impact would also be considered cumulatively significant and unavoidable (Impact 3.7-6).

6. **Transportation**: The Project would have a significant and unavoidable impact with regard to the Project's generation of additional Vehicle Miles Traveled (VMT), and no feasible mitigation is identified to reduce the impact (Impact 3.13-2). This impact would also be cumulatively significant and unavoidable (Impact 3.13-5).

S.2.5 Irreversible Impacts

Section 15126.2(c) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continuing phases of the project. Irreversible impacts also can result from damage caused by environmental accidents associated with a project. Irretrievable commitments of resources are evaluated to ensure that such consumption is justified.

Buildout of the Project would commit nonrenewable resources during Project construction and ongoing utility services during Project operations. During operations, some oil, gas, and other fossil fuels and nonrenewable resources would be consumed and irreversible commitments of small quantities of nonrenewable resources would occur as a result of long-term Project operations. Operation of the Project would also result in the irreversible extraction and consumption of aggregate material that is mined from the Project site and ultimately sold.

S.3 Summary of Alternatives

The following alternatives to the Project are evaluated in this Draft EIR:

1. **No Project Alternative**: Assumes that no mining or aggregate processing occurs on the Project site, and that the current uses continue.
2. **Alternative 2 - Phases 1 and 2 Only and Processing Plant Relocation**: Phases 1 and 2 would be mined at the same level as the Project, but the Phases 3 and 4 sites would not be mined. The crossing over Sargent Creek and the conveyor belt/access road would not be constructed because access to the Phases 3 and 4 sites would not be needed. The amount of aggregate product produced under this alternative would be 21.5 million cubic yards (cy), an approximate 15 percent reduction compared to the Project as proposed.

   The processing plant would be moved approximately 0.85 miles north of Tar Creek. In addition, Old Monterey Road would be realigned, and the Tar Creek bridge would be located upstream of the location proposed for the Project.

   Other aspects of this alternative would be the same as the proposed Project.
3. **Alternative 3 – Reduced Phases 1 and 2 Only, Processing Plant Relocation, and Addition of Screening Berm**: This alternative would be similar to Alternative 2, except that a screening berm would be constructed along the Phase 1 mining pit and the mining activities would not occur above 500 feet mean sea level (msl). In addition, there would be a 15 percent reduction in the amount of aggregate mined in Phases 1 and 2, for a total reduction in mining of 28 percent.

For a complete description of Project alternatives, please see Chapter 4, Alternatives. The relative impacts of the alternatives are summarized in Table S-2.

S.3.1 Environmentally Superior Alternative

In addition to the discussion and comparison of impacts of the alternatives to the proposed Community Plan, CEQA requires that an "environmentally superior" alternative be identified and the reasons for such selection disclosed (CEQA Guidelines Section 15126.6(e)(2). In general, the environmentally superior alternative is the alternative that would be expected to generate the least adverse impacts.

The No Project alternative would not have any environmental impacts, so it would be considered the environmentally superior alternative. Alternative 3 would be environmentally superior to the Project and to Alternative 2 because it would avoid and/or reduce most significant impacts of the Project. This includes the significant and unavoidable impacts to the Betevel Bluff Tribal Cultural Resource and the Juristac Landscape Tribal Cultural Resource, as well as impacts on air quality, biological resources, paleontological resources, greenhouse gas emissions, water quality and vehicle miles traveled.

S.4 Areas of Controversy

Any of the environmental issues considered during scoping or in this Draft EIR could become an issue of controversy. Preliminarily, the County has identified areas of controversy as including the issues and questions raised in agency and public comments received during scoping; all comments received during the scoping period are included in **Appendix A** to this Draft EIR.

Primary areas of concern include the loss of biological habitat and compensatory mitigation, and the loss of cultural and tribal cultural resources, particularly those of importance to the Amah Mutsun Tribal Band of Costanoan/Ohlone Indians. Other potential areas of concern include the effects of the Project on surface and groundwater quality and Project construction traffic and vehicle miles traveled. These issues are addressed in sections 3.4, *Biological Resources,* 3.5, *Cultural and Tribal Cultural Resources*, 3.10, *Hydrology and Water Quality*, and 3.13*, Transportation.*

S.5 Unresolved Issues

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved, which include the choice among alternatives and whether or how to mitigate significant impacts. The following major issues are to be resolved:

- Choose among alternatives;
- Determine whether the recommended mitigation measures should be adopted or modified; and
- Determine whether additional mitigation measures need to be applied to the Project.

S.6 Summary of Project Impacts and Mitigation Measures

Table S-1 summarizes the environmental impacts of the Project and recommended mitigation measures that, if adopted, would avoid or substantially reduce potential significant impacts of the Project. The analysis of each impact is provided on a resource-by-resource basis in Chapter 3.

TABLE S-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Aesthetics		
Impact 3.2-1: The Project would alter the visual character of the Project site or scenic resources visible from U.S. 101, a County-designated scenic highway.	**Mitigation Measure 3.2-1:** Once constructed, the Applicant shall contour the screening berm to resemble surrounding land features, to the extent possible, and shall plant fast-growing native vegetation. The screening berm shall either be extended around the northern portion of the processing plant, or fencing and vegetation shall be used to further screen views of the processing plant from southbound traffic on U.S. 101. Native vegetation and/or trees shall be planted around the northern portion of the processing plant to further screen views of the processing plant from viewpoints on southbound U.S. 101 that would not be blocked by the screening berm. The proposed final design for screening shall be reviewed by the County prior to construction in order to ensure that views of the processing plant are screened to the extent possible by a combination of the screening berm, fencing, and vegetation in order to achieve a natural appearance, to the extent possible.	Significant and Unavoidable
Impact 3.2-2: The Project could introduce a new source of substantial light or glare.	None required.	Less than Significant
Impact 3.2-3: The Project would contribute to cumulative changes in visual character of public views from U.S. 101, a County-designated scenic highway.	**Mitigation Measure 3.2-3:** Implement Mitigation Measure 3.2-1.	Significant and Unavoidable
Impact 3.2-4: The Project could contribute to cumulative increases in light and glare.	None required.	Less than Significant
Air Quality		
Impact 3.3-1: The Project would affect implementation of the applicable air quality plans.	**Mitigation Measure 3.3-1:** Implement Mitigation Measures 3.3-2a and 3.3-2b, discussed in greater detail below under Impact 3.3-2.	Significant and Unavoidable
Impact 3.3-2: The Project would emit criteria air pollutants ozone precursors (NO_x and ROG), $PM_{2.5}$, and PM_{10}, for which the region is in nonattainment status.	**Mitigation Measure 3.3-2a:** The Project Applicant shall require that all off-road mobile equipment and Applicant-owned trucks powered by diesel used during the construction and operation phases of the Project meet USEPA Tier 4 engine standards for NO_x (i.e., Tier 4 final). If implementation of this requirement is determined to not be feasible for given piece(s) or model(s) of off-road equipment, the Project Applicant shall substantiate the reason(s) for infeasibility and shall propose equipment with the next most restrictive tier status (e.g., Tier 3, Tier 2) and shall submit the documentation to the County of Santa Clara for review and approval at least 7 days prior to the planned use of the non-Tier 4 equipment. **Mitigation Measure 3.3-2b:** The Project Applicant shall develop and implement a comprehensive dust control plan for Project construction and operation and shall submit the plan to the County Department of Planning and Development at least 90 days prior to the start of construction for review and approval. Designate a person to implement and modify the Dust Control Plan as appropriate. The plan shall include but not be limited to the following elements based on BAAQMD recommended construction mitigation measures, most of which also apply to Project operations: 1. Water all active unpaved vehicle roadways at least twice a day during dry conditions to ensure that roadways are damp enough to suppress dust generation;	Significant and Unavoidable

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	2. All haul trucks transporting soil or sand off-site shall be covered; 3. Limit vehicle speeds to 15 miles per hour on all unpaved roadways and off-road areas (e.g., mining pits); 4. Prevent dirt track out on to public roadways by using wheel washers or other washing methods to ensure that tires or tracks on all trucks and equipment leaving the site are cleaned of dirt. The use of dry power sweeping is prohibited; 5. Remove any visible mud or dirt tracked-out onto Old Monterey Road using wet power vacuum street sweepers at least once per day; 6. Water, cover, or treat (with non-toxic soil stabilizers) exposed stockpiles of fine materials; 7. Water and/or treat inactive exposed soil areas including areas exposed within mining pits, to minimize dust generation from wind or other ground disturbances; 8. Apply water misting or spraying to all material transfer points, including export truck loading activities; 9. Post a publicly visible sign with the telephone number and person to contact at the County of Santa Clara regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations; 10. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph; 11. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established; 12. All trucks and equipment, including their tires, shall be washed off prior to leaving the site; 13. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6-to 12-inch compacted layer of wood chips, mulch, or gravel; 14. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than 1 percent; and 15. In the processing areas where vehicles and equipment travel, apply dust suppressant at least once per year in addition to watering and limiting travel speeds to 15 mph. Dust suppressants or gravel would be applied more often if visible dust clouds extending beyond the roadway are noted, or apply gravel to the areas.	
Impact 3.3-3: The Project could expose sensitive receptors to substantial pollutant concentrations.	None required.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Impact 3.3-4: The Project would not result in odorous emissions adversely affecting a substantial number of people.	None required.	Less than Significant
Impact 3.3-5: The Project would contribute nonattainment pollutants (ozone precursors, $PM_{2.5}$, and PM_{10}) to cumulative increases in air pollutants.	**Mitigation Measure 3.3-5:** Implement Mitigation Measures 3.3-2a and 3.3-2b.	Significant and Unavoidable
Impact 3.3-6: The Project could contribute to cumulative TAC concentrations.	None required.	Less than Significant
Impact 3.3-7: The Project would not combine with other, cumulative sources of odors in the Project vicinity adversely affecting a substantial number of people.	None required.	Less than Significant
Biological Resources		
Impact 3.4-1: Project activities would result in adverse effects on special-status plant species.	**Mitigation Measure 3.4-1a:** The Applicant shall implement the following measures prior to any ground disturbance, vegetation removal, or other activities in natural (i.e., undeveloped) habitat for construction or for the start of mining activities associated with each new mining phase to ensure that impacts to special-status plants as a result of Project activities are avoided or minimized. 1. Preconstruction surveys for special-status plants shall be conducted by a qualified plant ecologist prior to all phases of ground disturbance or construction activity throughout the Project life. A focused survey during the appropriate bloom season for the 10 special-status plant species that could occur shall be conducted in any area of proposed ground disturbance and a surrounding 50-foot buffer area. Surveys must take place no more than four years before ground disturbance in any given area commences. Surveys shall be conducted in a year with near-average or above-average precipitation (i.e., precipitation that is at least 70% of the long-term average for the site, as determined using the 30-year climate normals from the PRISM Climate and Weather System [https://prism.oregonstate.edu] or a similar source). Alternatively, these surveys may be conducted in a year of below-average precipitation if the target species are documented to be flowering/detectable at nearby reference populations despite the below-average rainfall. If surveys are conducted in a below-average rainfall year and detectability of a species at a reference population cannot be confirmed, then no impacts should occur in suitable habitat for that species until a survey can be conducted in an appropriate year (with adequate rainfall or detectability at a reference population). The purpose of the surveys shall be to assess the presence or absence of the potentially occurring species. If none of the target species are found in the impact area or surrounding 50-foot buffer, then no further mitigation measures shall apply. If any individual special-status plants are found in the impact area or 50-foot buffer, then the Applicant shall implement all of the following additional mitigation measures. • In consultation with a qualified plant ecologist, the Applicant shall redesign the Project to avoid direct and indirect impacts to the species to the extent feasible (e.g., via the establishment of an appropriately sized buffer of at least 50 feet or larger, as determined by a	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	qualified plant ecologist based on the avoided species and the type of nearby impacts). If all special-status plant occurrences can be avoided via an adequate buffer (as determined by a qualified plant ecologist), then no further mitigation is necessary. • If a qualified plant ecologist determines that avoidance is not feasible (including determining that the buffers around an occurrence are inadequate to avoid impacts), then the Applicant shall implement the following mitigation measures. - Prior to initiation of impacts, a qualified plant ecologist will determine the extent of impacts based on the number of individuals impacted and the acreage of habitat occupied by each special-status plant species, based on the results of the preconstruction survey described above and the impact areas. - The Applicant shall provide compensatory mitigation through preservation and management of another, existing on-site or off-site population within Santa Clara County, or in neighboring portions of Santa Cruz, San Benito, or Monterey Counties within 30 miles of the Project area. First priority shall be areas located on Sargent Ranch, if other on-site populations are present. Off-site mitigation shall only be used if on-site mitigation cannot fully compensate for species losses. Habitat occupied by the affected species shall be preserved and managed in perpetuity at a minimum 2:1 mitigation ratio (at least two plants preserved for each plant affected, and also at least two occupied acres preserved for each occupied acre affected), for any impact to Congdon's tarplant. This 2:1 mitigation ratio is not lower because Congdon's tarplant is ranked 1B by the CNPS, and such species have declined significantly over the last century and are considered "rare, threatened, or endangered". However, because no particularly high-quality habitat for Congdon's tarplant is present in the Project area, a 2:1 mitigation ratio is sufficient to offset Project impacts. For the other nine special-status plant species that may to be impacted by the Project, habitat occupied by the affected species shall be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acre preserved for each occupied acre affected). This mitigation ratio is not higher than 1:1 because these other nine species have a CRPR of 4; such species are on the CNPS "watch list" because they are of limited distribution, but they are not as scarce or imperiled as CRPR 1B species, and therefore compensatory mitigation at a 1:1 ratio would adequately offset Project impacts to these species. - Alternatively, a contribution to the Santa Clara Valley Habitat Agency, in an amount determined in coordination with the agency, for maintenance of special-status plant species populations within the VHP Covered Area may be considered appropriate mitigation for impacts, if approved by the County Department of Planning and Development. This contribution shall be made prior to the initiation of impacts to special-status plants. - Areas proposed to be preserved as compensatory mitigation for special-status plant impacts must contain verified extant populations of the CRPR-ranked plants that would be impacted. Mitigation areas shall be managed in perpetuity to encourage persistence	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	and even expansion of the preserved target species. Mitigation lands shall not be located on land that is currently publicly owned for resource protection unless substantial enhancement of habitat quality (e.g., removal of invasive plants, correction of over-grazing, introduction of appropriate grazing management) shall be achieved by the mitigation activities. The mitigation habitat shall be of equal or greater habitat quality compared to the impacted areas, as determined by a qualified plant ecologist, in terms of soil features, extent of disturbance, vegetation structure, and dominant species composition, and shall contain at least as many individuals of the species as are impacted by Project activities. The permanent protection and management of mitigation lands shall be ensured by the Applicant through an appropriate mechanism, such as a conservation easement to the County or other qualified entity approved by the County, which could be included in the conservation easement referenced in Mitigation Measure M 3.5-4b. - If Project-specific compensatory mitigation occurs (instead of a contribution to the Santa Clara Valley Habitat Agency), a Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared by a qualified ecologist and implemented by the Applicant for the mitigation lands. The HMMP shall be prepared by a qualified plant or restoration ecologist. The HMMP shall be approved by the County Department of Planning and Development prior to the start of ground-disturbing activities that would impact special-status plants. The HMMP shall include, at a minimum, all of the following information: o Summary of impacts on special-status plant species (including individuals and habitat) and the proposed mitigation; o Description of the location and boundaries of the mitigation site and description of existing site conditions, including documentation of the occurrence of the special-status plant species for which mitigation is being provided; o Description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat) the mitigation site for the focal special-status species; o Description of measures to transplant individual plants or seeds from the impact area to the mitigation site, if appropriate (which shall be determined by a qualified plant or restoration ecologist depending on the species and circumstances); o Proposed management activities to maintain high-quality habitat conditions for the focal species; o Description of habitat and species monitoring measures on the mitigation site, including specific, objective final criteria and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. At a minimum, performance criteria shall include demonstration that any plant population fluctuations over the monitoring period do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	mitigation population that can be attributed to management (e.g., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management); o Contingency measures for mitigation elements that do not meet performance criteria; and o Description of adaptive management , indicating how management may be adapted depending on climate change or other changes in site conditions and the process by which adaptive management decisions will be made and implemented, **Mitigation Measure 3.4-1b:** To minimize the potential for Project activities to result in the introduction and/or spread of invasive plants and Phytophthora (a plant-damaging water mold), the Applicant shall prepare and implement an Invasive Species and Phytophthora Management Plan (ISPMP). The ISPMP shall be approved by the County Department of Planning and Development prior to issuance of a grading permit by the County. The ISPMP shall detail the measures to be implemented to minimize the potential for the introduction and spread of invasive plants and Phytophthora during Project implementation, including during Project construction, operations, and reclamation. At a minimum, the ISPMP shall include a description of the following information: 1. How materials (including vegetation, soil, and construction materials) and construction personnel, vehicles, and equipment will move around the site and between on-site and off-site areas. 2. Measures that will be implemented to minimize the potential for introduction or spread of invasive plants and Phytophthora on equipment, tools, vehicles, and personnel, including (but not limited to) the following: • Before arrival at the site, equipment, vehicles, and tools will be free of soil including debris on tires, wheel wells, vehicle undercarriages, and other surfaces. A high-pressure washer and/or compressed air may be used to ensure that soil and debris are completely removed. • Vehicles may be cleaned at a commercial vehicle or appropriate truck washing facility. Vehicles that only travel and park on paved public roads do not require external cleaning. The interior of vehicles and equipment (cabs, etc.) must be free of mud, soil, gravel, and other debris (vacuumed, swept or washed). • Vehicle wash stations may be installed at entrances and exits to the site. All wastewater from those stations should be detained so that it does not enter natural waterbodies or areas of unimpacted vegetation. • Small tools and equipment must be washed to be free of soil or other contamination and sanitized. Wood handles on tools should be sealed with a waterproof coating to make them easier to sanitize. Before sanitizing, remove all soil and organic material (roots, sap, etc.) from the surface. If necessary, use a detergent solution and brush to scrub off surface contaminants. The sanitizing agent may also be used as a cleaning fluid. Screwdrivers or similar implements may be needed to clean soil out of crevices or shoe treads. Brushes and other implements used to help remove soil need to be cleaned and sanitized after use.	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• After surface soil and contamination are removed, treat the surface with a sanitizing agent, allowing the appropriate contact time before use or rinsing. If surfaces are clean and dry, wet surfaces thoroughly and allow for the appropriate contact time. If the sanitizer has been used to help clean the surface, use fresh sanitizer to rinse off any dirty solution and again allow the required contact time. If treated surfaces are wetted with water, the sanitizing solution will become diluted. Apply enough sanitizer to completely displace the water film and then allow the required contact time. Sanitizing agents may be applied by using spray bottles and applied to thoroughly wet the surface. Observe all appropriate safety precautions to prevent contact with eyes or skin when using these agents. • Sanitizing agents may include 70-90% ethyl or isopropyl alcohol (spray to thoroughly wet the surface and allow to air dry before use); freshly diluted bleach solution (0.525% sodium hypochlorite) for a minimum of 1 minute (due to corrosivity, not advised for steel or other materials damaged by bleach); 2000 ppm quaternary ammonium disinfectant for 1 min (or according to manufacturer recommendations), freshly made or tested to ensure target concentrations. • Soles and uppers of footwear must be free of debris and soil before arriving at the site. Clean and sanitize footwear as described above. • Before entering the job site, field workers will receive training that includes information on *Phytophthora* diseases and how to prevent the spread of these and other soil-borne pathogens by following approved phytosanitary procedures. • Do not bring more vehicles into work sites than absolutely necessary. Within the site, keep vehicles on surfaced or graveled roads whenever possible to minimize soil movement. 3. measures to revegetate temporarily impacted areas using appropriate seed mixes that do not contain invasive species and that are free from Phytophthora, shortly following completion of those impacts 4. measures for disposing of cleared vegetation so that Phytophthora on plant roots or invasive plant propagules are not spread to uncontaminated areas 5. measures for transporting and stockpiling soil so that Phytophthora or invasive plant propagules are not spread from contaminated soil (e.g., in runoff) 6. monitoring to ensure that the ISPMP is properly implemented and that infestations of invasive species or Phytophthora are detected before they become widespread or severe 7. methods of addressing any infestations of invasive species, or preventing infestations of Phytophthora from spreading 8. the means by which plant materials used in site restoration, during site reclamation, will be ensured to be free of invasive species and Phytophthora infestation **Mitigation Measure 3.4-1c:** To minimize impacts on special-status plants and animals, and sensitive habitats, the Applicant shall retain a qualified biologist to conduct an employee education training	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	session for employees working on all construction, operations, and reclamation activities, prior to those employees' work on the Project. This training session can consist of in-person training or preparation of a video or similar presentation. Personnel shall be required to attend the presentation, which shall describe any special-status or sensitive species, and sensitive/regulated habitats, that may be present; avoidance, minimization, and conservation measures; legal protection of these animals; the boundaries of Project work areas; and other related issues, including any relevant conditions from resource agency permits obtained for Project implementation. A fact sheet or other supporting materials containing this information shall be prepared and distributed. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures.	
Biological Resources (cont.)		
Impact 3.4-2: Project nitrogen emissions would not result in adverse effects on habitat for the Bay checkerspot butterfly and rare serpentine-associated plants located off-site.	None required.	Less than Significant
Impact 3.4-3: Project activities would result in adverse effects on special-status fish and their habitat.	**Mitigation Measure 3.4-3:** The Applicant shall implement the following measures and the "Aquatic Avoidance and Minimization Measures" contained in Table 6-2 of the VHP, during any Project construction activity, and during operational and reclamation activities as appropriate (e.g., equipment storage or refueling, or other activities that could result in spills) to minimize increases of peak discharge of stormwater and to reduce runoff of sediment and pollutants to protect water quality. The following measures to be implemented by the Applicant shall be monitored by the qualified biologist retained by the Applicant as described in Mitigation Measure 3.4-5, who shall be present to monitor construction activities during initial ground disturbance or vegetation clearing in any given area or Project phase. a. No construction within creeks or riparian habitats shall occur during the wet season (October 15 to April 15, or as otherwise indicated by the conditions of resource agency permits). b. Ground disturbance shall be minimized so that only those phases of the Project and ancillary supporting facilities, including but not limited to road construction, conveyor installation and operation, and plant and rail construction, which are actively being constructed or being mined would be cleared/prepared. c. The removal of riparian vegetation shall be minimized to the amount necessary to accomplish the required activity and comply with public health and safety directives. Any riparian vegetation to be removed shall be clearly identified on plans submitted to and approved by the County Department of Planning and Development prior to any riparian vegetation removal, along with evidence establishing why removal of such vegetation is necessary. d. Erosion control plans shall be submitted to and approved by the County Department of Planning and Development prior to initiation of ground disturbance and shall include the following: • Control exposed soil by stabilizing slopes (e.g., with erosion control blankets) and protecting channels (e.g., using silt fences or straw wattles). Appropriate erosion control measures (e.g., fiber rolls, filter fences, vegetative buffer strips) shall be used on-site adjacent to creeks	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	or riparian vegetation. Fiber rolls used for erosion control shall be certified as free of noxious weed seed. • Stockpiled soil shall be stabilized with geotextile or plastic covers. Sediments shall be stored and transported in a manner that minimizes water quality impacts. If soil is stockpiled, no runoff shall be allowed to flow back to the channel. e. If high levels of groundwater in a work area are encountered and dewatering must occur, the water shall be directed into infiltration basins, holding ponds, or areas with vegetation to remove sediment prior to the water re-entering a creek. f. Construction and mining waste shall be disposed of in designated areas and stormwater shall be prevented from flowing onto or off of these areas. g. Personnel shall use the appropriate equipment for the job that minimizes disturbance to the stream bottom. Appropriately tired vehicles, either tracked or wheeled, shall be used depending on the situation.	
Impact 3.4-4: Project activities would result in adverse effects on California red-legged frogs and their habitat.	**Mitigation Measure 3.4-4a:** The Applicant shall implement the following avoidance and minimization measures for all ground-disturbing activities throughout the life of the Project, including construction, operations, and reclamation, at access roads, bridges over Tar Creek and Sargent Creek, mining areas, and processing facilities, to minimize impacts on CRLF: 1. A biologist approved by the County and USFWS (hereafter “approved biologist”) shall be onsite during all activities that, in the opinion of the approved biologist and after consultation with USFWS, may result in impacts to individual CRLF. For example, once a work area is surrounded by exclusion fencing (as described below), any CRLF within that exclusion fencing have been relocated (as described below), and the qualified biologist has surveyed the area within the exclusion fencing well enough to determine that no CRLF are present, activities within the exclusion fencing and on other “developed” areas (e.g., roads and the processing plant) may proceed without the need for a biological monitor. The qualifications of the biologist(s) shall be submitted to the County and USFWS for review and written approval at least 15 calendar days prior to the date earthmoving is initiated at the Project site. 2. Prior to the initiation of any other protective measures, an approved biologist shall determine, in consultation with the USFWS, appropriate relocation sites for any adult, juvenile, or larval CRLF that may be observed during preconstruction surveys and monitoring and that need to be relocated. The approved biologist shall also determine, in consultation with the USFWS, how any CRLF showing evidence of poor health (which might indicate disease such as chytrid) should be handled or disposed of, to avoid translocating diseased individuals into habitat supporting healthy amphibians. 3. The Applicant shall install and maintain exclusion fencing around construction and mining zones, to prevent CRLF from moving into these areas. Exclusion fencing shall be at least 3 ft high, and the lower 6 inches of the fence shall be buried in the ground to prevent animals from crawling under. The remaining 2.5 ft shall be left above ground to serve as a barrier for animals moving on the ground surface. The fence shall be pulled taut at each support to prevent folds or snags. The	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	Applicant shall inspect such fencing regularly (at least weekly) and maintain it in good condition throughout the construction and mining period. 4. The Applicant shall flag or fence construction and mining areas to identify areas where work is permitted to occur, and work activities shall be confined to these areas. 5. An approved biologist shall delineate sensitive habitat areas such as streams, wetlands, and riparian habitats outside the permitted work area with high-visibility flagging or fencing to prevent encroachment of construction and mining personnel and equipment into any sensitive areas during Project work activities. At no time shall equipment or personnel be allowed to enter, disturb, or otherwise adversely affect these sensitive habitat areas without prior written authorization from the County and USFWS. 6. No more than 24 hours prior to initial ground disturbance for each phase of construction or mining activity, an approved biologist shall conduct a preconstruction survey for the CRLF at the Project site. • The survey shall consist of walking the Project limits and within the Project site to ascertain the possible presence of the species. The approved biologist shall investigate all areas that could be used by the CRLF for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as California ground squirrels or gophers. • Each encounter with the CRLF shall be treated on a case-by-case basis in coordination with the USFWS, but the general procedure is as follows: (1) the animal shall not be disturbed if it is not in danger; or (2) the animal shall be moved to a secure location if it is in any danger. These procedures are further described below: 7. When a CRLF is encountered, all activities which could result in the harassment, injury, or death of the individual shall be immediately halted. The approved biologist shall then assess the situation in order to select a course of action that would avoid or minimize adverse effects to the animal. To the maximum extent possible, contact with the frog shall be avoided and the Applicant shall allow it to move out of the hazardous situation to a secure location on its own volition. This procedure applies to situations where a CRLF is encountered while it is moving to another location. It does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the species should the individual move away from the hazardous location. 8. CRLF that are in danger shall be relocated and released by the approved biologist outside the construction or mining area within the same riparian area or watershed. If relocation of the frog outside the fence is not feasible (i.e., there are too many individuals observed per day), the approved biologist shall relocate the animals to a USFWS preapproved location. Prior to the initial ground disturbance, the Applicant shall obtain approval of the relocation protocol from the Service in the event that a CRLF is encountered and needs to be moved away from the Project site. 9. The approved biologist shall limit the duration of the handling and captivity of the CRLF to the minimum amount of time necessary to complete the task. If the animal must be held in captivity, it	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	shall be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. The container used for holding or transporting the individual shall not contain any standing water. 10. No construction within creeks or riparian habitats shall occur during the wet season (October 15 to April 15, or as otherwise indicated by the conditions of resource agency permits). Outside of creeks and riparian habitats, when ground-disturbing activities in any given location commence between October 15 and April 15, daily monitoring by an approved biologist shall occur for the CRLF until April 16 or until all clearing and grubbing have been completed and the work area is completely surrounded by wildlife exclusion fencing, at which time CRLF would no longer be able to enter the work area. 11. To minimize harassment, injury death, and harm in the form of temporary habitat disturbances, all Project-related vehicle traffic shall be restricted to established roads, construction and mining areas, equipment staging, storage, parking, and stockpile areas. These areas shall be delineated by the Applicant in preconstruction surveys and shall be established in locations disturbed by previous activities whenever feasible unless otherwise approved by the County Planning Department. 12. Project-related vehicles shall observe a 15 mile per hour speed limit within construction and mining areas, except on County roads, and State and Federal highways. Off-road traffic outside of designated and fenced Project work areas shall be prohibited. 13. The Applicant shall ensure bio-swales and bio-filtration are installed at the Project site adjacent to roadways to avoid and minimize sediment loading and point source pollutants. 14. If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 5 millimeters to prevent CRLF from entering the pump system. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate. 15. Uneaten human food and trash attracts crows, ravens, coyotes, and other predators of the CRLF. A litter control program shall be instituted by the Applicant for construction, operations, and reclamation work. All workers shall ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers shall be removed from the Project area at the end of each working day. 16. No insecticides or herbicides shall be used during construction or operations where there is the potential for these chemical agents to enter creeks, streams, waterbodies, or uplands that contain suitable habitat for the CRLF. 17. No canine or feline pets or firearms (except for federal, state, or local law enforcement officers and security personnel) shall be permitted at the Project site to avoid and minimize harassment, injury, and death of the CRLF. 18. For onsite storage of pipes, conduits and other materials that could provide shelter for CRLF, the Applicant shall use an open-top trailer or some other means to elevate the materials above	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	ground. This is intended to reduce the potential for animals to climb into the conduits and other materials. 19. To the maximum extent practicable, no construction activities shall occur during rain events (i.e., when rain hits the ground) or within 24-hours following a rain event. Prior to construction activities resuming after a rain event, an approved biologist shall inspect the action area and all equipment/materials for the presence of CRLF. 20. To the maximum extent practicable, night-time construction shall be minimized or avoided by the Applicant because dusk and dawn are often the times when the CRLF is most actively moving and foraging. Because dusk and dawn are often the times when the CRLF is most actively moving and foraging, to the maximum extent practicable, earthmoving and construction activities will cease no less than 30 minutes before sunset and will not begin again prior to no less than 30 minutes after sunrise. 21. Plastic monofilament netting (erosion control matting), loosely woven netting, or similar material in any form shall not be used at the Project site because CRLF can become entangled and trapped in them. Any such material found on site shall be immediately removed by the approved biologist, construction or mining personnel, or the Applicant. Materials utilizing fixed weaves (strands cannot move), polypropylene, polymer or other synthetic materials shall not be used. 22. Trenches or pits one (1) foot deep or more that are going to be left unfilled for more than forty-eight (48) hours shall be securely covered by the Applicant with boards or other material to prevent the CRLF from falling into them, unless slopes leading out of the pits are suitable to allow CRLF to leave on their own. If this is not possible, the Applicant shall ensure wooden ramps or other structures of suitable surface that provide adequate footing for the CRLF are placed in the trench or pit to allow for their unaided escape. The trench, pit, or hole also shall be examined by the approved biologist each workday morning during construction at least one hour prior to initiation of work and in the late afternoon no more than one hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the approved biologist shall remove and transport it to a safe location or contact the USFWS for guidance. 23. The approved biologist(s) shall permanently remove any aquatic non-native wildlife species, such as bullfrogs and crayfish from the Project site, to the maximum extent possible. **Mitigation Measure 3.4-4b:** The Applicant shall implement the following avoidance and minimization measures for certain operational activities: 1. Impacts on the known CRLF breeding pond in the Phase 2 geotechnical setback shall be avoided, if feasible, so that this pond is not lost (i.e., so that the pond is not removed, filled, or drained so that it no longer provides suitable amphibian breeding habitat). If loss of this pond is unavoidable, compensatory mitigation will be provided as described in Mitigation Measure 3.4-4c(3). 2. If mining activity that directly disturbs any pools or ponds within a mining pit, including retention basins, experiences a lull of at least 7 days, an approved biologist shall conduct a survey of the pool, pond, or basin for all life stages of the CRLF before mining in that	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	waterbody resumes. Any individuals detected shall be captured (e.g., via dipnet, seine, or other means suitable for the life stage in question) and relocated to the nearest habitat suitable for the life stage in question (e.g., egg masses and larvae shall be moved to other ponds or pools with suitable hydroperiod for successful metamorphosis) by the approved biologist. 3. The Applicant shall install wildlife exclusion fencing around the storage pond within the processing plant to prevent special-status species such as CRLF from entering the pond. Exclusion fencing shall be at least 3 ft high, and the lower 6 inches of the fence shall be buried in the ground to prevent animals from crawling under. The remaining 2.5 ft shall be left above ground to serve as a barrier for animals moving on the ground surface. The fence shall be pulled taut at each support to prevent folds or snags. Such fencing shall be inspected regularly (at least weekly) and maintained in good condition throughout the period of the plant's operation. 4. All lighting on the site, including security lighting (remain on throughout the night but shall be turned off if feasible) and lighting used during the plant's hours of operation, shall be minimized in terms of intensity, height of lights, extent (i.e., dispersion around the processing plant), and spillover into adjacent areas. A detailed lighting plan shall be provided to the County Department of Planning and Development for review and approval as part of the processing plant building permit or any grading permit submittal, whichever occurs first. The lighting plan shall show the fixture locations and specifications. All lighting shall be pointed downward and shielded. A photometric plan shall be included showing the lumens (or other similar measurement) for each fixture at the site. Light spillover outside of the processing plant shall be limited, and no fixtures shall be installed on the east side of the processing plant. 5. Fencing with screening shall be installed around as much of the main plant as possible, as described in Mitigation Measure 3.4-15.2. **Mitigation Measure 3.4-4c:** The Applicant shall provide compensatory mitigation for impacts to CRLF habitat as follows: 1. Prior to initiation of impacts, a qualified biologist will determine the extent of impacts on CRLF habitat based on the acreage of all non-developed habitat to be impacted. The pond in the Phase 2 geotechnical setback area and the pond immediately south of Phase 4 that will be altered hydrologically by mining will be considered breeding habitat, and all other non-developed habitat to be impacted will be considered nonbreeding habitat. 2. The Applicant shall provide mitigation to compensate for unavoidable impacts on CRLF nonbreeding habitat (e.g., upland habitat and nonbreeding aquatic habitat) through the preservation, management, and enhancement (e.g., through long-term management targeted toward this species) of high-quality habitat that is already occupied by the CRLF at a ratio of at least 2:1 (mitigation:impact), on an acreage basis, or as determined through the consultation and/or permitting process with USFWS. This 2:1 mitigation ratio is not lower because CRLF appear to regularly use the Project site and breed in or near impact areas, so that a 2:1 mitigation ratio is deemed necessary to offset Project impacts, but it is not higher because Project areas will	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	be restored to conditions suitable for CRLF following completion of mining. First priority for compensatory mitigation sites shall be areas located on Sargent Ranch. Off-site mitigation shall only be used if on-site mitigation cannot fully compensate for habitat losses. 3. The Applicant shall provide mitigation to compensate for unavoidable impacts on CRLF breeding habitat, including the pond in the Phase 2 geotechnical setback area (if it will be lost or permanently drained) and the pond immediately south of Phase 4 that will be altered hydrologically by mining, through one or both of the following methods, or equivalent or more effective methods as determined through the consultation and/or permitting process with USFWS: • the creation of aquatic habitat suitable for CRLF breeding that could support the species at a 2:1 (mitigation:impact) ratio, on an acreage basis. • the enhancement of degraded aquatic habitat that is unsuitable for use by CRLF, but that is in close proximity to areas of known occurrence and can be made more suitable for use via the eradication of aquatic predators (e.g., bullfrogs and predatory fish) at a 3:1 mitigation ratio, on an acreage basis. First priority for compensatory mitigation sites shall be areas located on Sargent Ranch. Off-site mitigation shall only be used if on-site mitigation cannot fully compensate for habitat losses. 4. A qualified biologist shall develop an HMMP describing the measures that shall be taken to manage the created/enhanced breeding and upland habitat described above and to monitor the effects of management on the CRLF. The HMMP shall be submitted to the County Department of Planning and Development for review and approval prior to the start of any ground-disturbing activities. The County may retain a qualified biologist at the Applicant's expense to peer-review the HMMP. The HMMP shall include the following: • a summary of impacts on CRLF habitat and populations, and the proposed mitigation; • a description of the location and boundaries of the mitigation site and description of existing site conditions; • a description of measures to be undertaken if necessary, to enhance (e.g., through focused management) the mitigation site for CRLF; • proposed management activities, such as managed grazing, management of invasive plants, measures targeted at sustaining populations of burrowing mammals, or other measures to maintain high-quality habitat for CRLF; • a description of species monitoring measures on the mitigation site, including specific, goals and objectives (such as maintaining or increasing abundance of CRLF or maintaining or improving habitat suitability), performance indicators and success criteria (such as presence or abundance of upland refugia or hydroperiod of breeding habitat), monitoring methods (such as sampling of upland refugia or monitoring of the hydroperiod of breeding habitat),	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	data analysis, reporting requirements, and monitoring schedule. At a minimum, performance criteria shall include occupation by the CRLF of created aquatic habitat; • a description of the management plan's adaptive management component, including a description of how management may be adapted depending on climate change or other changes in site conditions and the process by which adaptive management decisions will be made and implemented, as well as contingency measures for mitigation elements that do not meet performance criteria; and • a description of the funding mechanism for the long-term maintenance and monitoring of the mitigation lands.	
Impact 3.4-5: Project activities would result in adverse effects on California tiger salamanders (CTS) and their habitat.	**Mitigation Measure 3.4-5a:** The Applicant shall implement all impact avoidance and minimization measures described in Mitigation Measures 3.4-4a and 3.4-4b for the CRLF to reduce impacts on CTS, and shall consult with CDFW (e.g., for approval of biologists and relocation areas, and for approval conditions in which no take of individual CTS is anticipated to occur within an area and site monitoring by the qualified biologist is no longer necessary) in addition to the County and USFWS for all measures involving CTS. **Mitigation Measure 3.4-5b:** 1. Prior to initiation of impacts, a qualified biologist will determine the extent of impacts on CTS habitat based on the acreage of all non-developed habitat to be impacted. 2. The Applicant shall provide mitigation to compensate for unavoidable impacts on CTS nonbreeding habitat (e.g., upland habitat and nonbreeding aquatic habitat) through the preservation, management, and enhancement (e.g., through long-term management targeted toward this species) of high-quality habitat that is already occupied by the CTS at a ratio of at least 1:1 (mitigation:impact), on an acreage basis, or as determined through the consultation and/or permitting process with USFWS and CDFW. This 1:1 mitigation ratio is not lower because CTS are expected to be present on the Project site at least in low numbers, so that a 1:1 mitigation ratio is deemed necessary to offset Project impacts, but it is not higher because surveys have documented that the species is scarce in the Project area (so that effects of the Project on this species' populations would be low), and Project areas would be restored to conditions suitable for CTS following completion of mining. If CTS are recorded breeding successfully in the stock pond in the Phase 2 geotechnical setback area and that pond is subsequently impacted, or in the pond adjacent to the Phase 4 mining area that will be impacted indirectly as a result of reduction in the pond's watershed, the Applicant shall provide mitigation for impacts to those breeding habitats at a ratio of at least 1:1, on an acreage basis, or as determined through the consultation and/or permitting process with USFWS and CDFW; mitigation for lost breeding habitat shall consist of creation, preservation, and management of CTS breeding habitat. The same mitigation areas established for CRLF can be used for CTS if both species are documented to be present. First priority for compensatory mitigation sites shall be areas located on Sargent Ranch. Off-site mitigation shall only be used if on-site mitigation cannot fully compensate for habitat losses.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	3. The HMMP described for CRLF in Mitigation Measure 3.4-6 will also describe the measures that shall be taken to manage the created/enhanced habitat and to monitor the effects of management on CTS. The HMMP shall be submitted to the County Department of Planning and Development for review and approval prior to the start of ground-disturbing activities. The County may retain a qualified biologist at the Applicant's expense to peer-review the HMMP. The HMMP shall include the following: • a summary of impacts on CTS habitat and populations, and the proposed mitigation; • a description of the location and boundaries of the mitigation site and description of existing site conditions; • a description of measures to be undertaken if necessary to enhance (e.g., through focused management) the mitigation site for CTS, including creation of new breeding habitat (if the Project impacts areas known to have been used for successful breeding by CTS); • proposed management activities, such as managed grazing, management of invasive plants, measures targeted at sustaining populations of burrowing mammals, and other measures to maintain high-quality habitat for CTS; • a description of species monitoring measures on the mitigation site, including specific, objective goals and objectives (such as maintaining or increasing abundance of CTS or maintaining or improving habitat suitability), performance indicators and success criteria (such as presence or abundance of upland refugia), monitoring methods (such as sampling of upland refugia), data analysis, reporting requirements, and monitoring schedule. At a minimum, performance criteria shall include demonstrated occurrence of CTS on the mitigation site; • a description of the management plan's adaptive management component, including a description of how management may be adapted depending on climate change or other changes in site conditions and the process by which adaptive management decisions will be made and implemented, as well as contingency measures for mitigation elements that do not meet performance criteria; and • a description of the funding mechanism for the long-term maintenance and monitoring of the mitigation lands.	
Impact 3.4-6: Project activities would result in adverse effects on western pond turtles and their habitat.	**Mitigation Measure 3.4-6:** The Applicant shall implement all impact avoidance and minimization measures described in Mitigation Measures 3.4-3 for water quality and 3.4-4a and 3.4-4b for the CRLF for the western pond turtle, and CDFW will be consulted (e.g., for approval of biologists and relocation areas) in addition to the County for all measures involving this species.	Less than Significant
Impact 3.4-7: Project activities would result in adverse effects on burrowing owls and their habitat.	**Mitigation Measure 3.4-7:** The Applicant shall implement the following measures (based on those contained within Condition 15 of the VHP) prior to groundbreaking activities for each phase of the Project (construction, operations, and reclamation) to ensure that individual burrowing owls are not injured or killed as a result of Project activities.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	Prior to any ground disturbance associated with the Project (including vegetation removal; construction of individual Project components, such as roads, conveyor belts, and mining infrastructure; and ground disturbance associated with the start of mining activities associated with each new mining phase), a qualified biologist retained by the Applicant shall conduct preconstruction surveys in all suitable burrowing owl habitat areas on and within 250 feet of the area in which ground disturbance is proposed. To maximize the likelihood of detecting owls, the preconstruction survey shall last a minimum of three hours. The survey shall begin one hour before sunrise and continue until two hours after sunrise (three hours total) or begin two hours before sunset and continue until one hour after sunset. A minimum of two surveys shall be conducted (if owls are detected on the first survey, a second survey is not needed). Owls observed shall be counted and their location shall be mapped. Surveys shall conclude no more than two calendar days prior to construction; thus, surveys must begin no less than four days prior to the start of construction, operations, or reclamation activities (two days of surveying plus up to two days between surveys and construction). To avoid last-minute changes in schedule that may occur if burrowing owls are found, a preliminary survey may be conducted up to 14 days before construction. This preliminary survey may count as the first of the two required surveys, as long as the second survey concludes no more than two calendar days in advance of construction. Should the preconstruction survey determine the presence of burrowing owls on or within 250 feet the site, then the Applicant shall implement the following avoidance measures. a. Avoidance during the Breeding Season. If evidence of burrowing owls is found during the breeding season (February 1 to August 31), all nesting or roosting sites that could be disturbed by Project construction shall be avoided during the remainder of the breeding season (if owls remain throughout the breeding season) or while the nest (i.e., a burrow occupied during the period February 1 to August 31) is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). Although burrowing owls are unlikely to nest on the Project site, there is a remote possibility that nesting may occur. Wintering owls in Santa Clara County often remain past February 1, at which time they cannot be distinguished from breeding birds. As a result, any owl present between February 1 and August 31 will be considered a potential breeder unless and until it leaves the site. Avoidance shall include establishment of a 250-foot non-disturbance buffer zone around nests. Construction may occur outside of the 250-foot non-disturbance buffer zone. Construction may occur inside of the 250-foot non-disturbance buffer during the breeding season only if the nest is not disturbed, and a qualified biologist retained by the Project Applicant develops an avoidance, minimization, and monitoring plan that is reviewed and approved by the CDFW prior to Project construction and meets all of the following criteria: • A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction). • The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• If there is any change in owl nesting and foraging behavior as a result of construction activities, all disturbance activities shall cease within the 250-foot buffer. Construction shall not resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the Project area and 250-foot buffer. • If monitoring indicates that the nest is abandoned prior to the end of the nesting season (as would occur if a wintering owl lingered past February 1 and then eventually migrated to its breeding areas outside the region), and the burrow is no longer in use by owls, the non-disturbance buffer zone may be removed. The qualified biologist will excavate the burrow to ensure that no owls are present and to prevent reoccupation after receiving approval from CDFW. b. Avoidance during the Non-Breeding Season. During the non-breeding season (September 1 through January 31), a 250-foot non-disturbance buffer shall be established around occupied burrows as determined by a qualified biologist. Construction activities outside of this 250-foot buffer are allowed. Construction activities within the 250-foot buffer are allowed if all of the following criteria are met in order to prevent owls from abandoning important overwintering sites: • A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction). • The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities. • If there is any change in owl nesting and foraging behavior as a result of construction activities, all disturbance activities shall cease within the 250-foot buffer. • If the owls are gone for at least one week, the Project Applicant may request approval from the CDFW that a qualified biologist excavate usable burrows to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue. Monitoring must continue as described above for the non-breeding season as long as the burrow remains active. c. Construction Monitoring. Based on the avoidance, minimization, and monitoring plan developed during construction, all non-disturbance buffer zones shall be established and maintained. A qualified biologist shall monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed. The biological monitor shall also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone or within 250 feet of such zone. d. Passive Relocation. Passive relocation shall only be allowed, with the approval of CDFW, during the non-breeding season (September 1 through January 31), and may only occur if the burrow needs to be removed or could collapse from construction activities. If passive relocation is allowed by CDFW, a qualified biologist shall passively exclude birds from their burrows during non-breeding season only by installing one-way doors in burrow entrances. These doors shall be in	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	place for at least 48 hours to ensure owls have left the burrow, and then the qualified biologist shall excavate the burrow to prevent reoccupation. Burrows shall be excavated using hand tools. During excavation an escape route shall be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having the overburden collapse into the burrow and trap owls inside.	
Impact 3.4-8: Project activities would result in adverse effects on tricolored blackbirds and their habitat.	**Mitigation Measure 3.4-8a:** The Applicant shall implement the following measures (based on those contained within Condition 17 of the VHP) prior to groundbreaking activities for each phase of the Project (construction, operations, and reclamation), to ensure that active tricolored blackbird colonies, including active nests, eggs, and young, are not lost as a result of Project activities. 1. Prior to the initiation of any ground disturbance, vegetation removal, or other activities involving habitat impacts or movement of Project personnel, vehicles, or heavy equipment for construction or for the start of mining activities associated with each new mining phase that occur between March 15 and July 31, a qualified biologist retained by the Applicant shall conduct preconstruction surveys in all suitable tricolored blackbird habitat areas on and within 250 feet of the area in which construction or operational activities are proposed. The survey will be conducted no more than two calendar days prior to the start of the construction or operational activity. To avoid last minute changes in schedule that may occur if an active nest (i.e., a nest that is under construction or contains eggs or young) is found, the Project Applicant may also conduct a preliminary survey more than two calendar days before the start of construction, operations, and reclamation activities. 2. If any emergent vegetation develops in the bottom of an active mining pit (i.e., one that has not yet undergone complete reclamation), and more than one week of inactivity within 250 feet of that emergent vegetation occurs during the breeding season (March 15-July 31), a qualified biologist shall perform a survey for nesting tricolored blackbirds prior to the initiation of any subsequent Project activity within 250 feet of the emergent vegetation. 3. If a tricolored blackbird nesting colony is present, the qualified biologist will map the extent of suitable nesting habitat in which nesting is taking place (this suitable habitat may extend beyond the locations of actual nests). A 250-foot buffer will be applied between the edge of that nesting habitat and Project activities. This buffer may be reduced in areas with dense forest or other habitat features between the construction activities and the active nest colony, or where there is sufficient topographic relief to protect the colony from excessive noise or visual disturbance. Depending on site characteristics, the sensitivity of the colony, and surrounding land uses, the buffer zone may also be increased beyond 250 feet. 4. If construction or operational activities take place during the breeding season when an active colony is present, a qualified biologist will monitor these activities to ensure that the 250-foot buffer zone is enforced. If monitoring indicates that Project activities outside of the buffer are affecting a breeding colony, the buffer will be increased if space allows (e.g., moving work areas farther away). If space does not allow, the Project activities causing disturbance of the colony will cease until the young have fledged or until the end of the breeding season, whichever occurs first. The biological monitor will also conduct training of construction personnel on the avoidance	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	procedures, buffer zones, and protocols in the event that tricolored blackbirds fly into an active construction zone (i.e., outside the buffer zone). **Mitigation Measure 3.4-8b:** If Project construction or operational activities will result in direct impacts (outside the breeding season) on nesting habitat known to have supported nesting tricolored blackbirds within the last five years (as identified in the CNDDB, through contact with local experts, and Project pre-activity surveys in Mitigation Measure 3.4-8a), compensatory mitigation for the loss of nesting habitat shall be provided. Prior to initiation of impacts on that nesting habitat, a qualified biologist will determine the acreage of nesting habitat (habitat used by nesting blackbirds in the previous five years) that will be impacted. Compensatory mitigation will be provided in the form of habitat preservation or creation at a ratio of 1:1 (on an acreage basis) and shall be described within the Project's HMMP prepared for the CRLF and CTS as described in Mitigation Measures 3.4-4c and 3.4-5b. First priority for compensatory mitigation sites shall be areas located on Sargent Ranch. Off-site mitigation shall only be used if on-site mitigation cannot fully compensate for habitat losses. Habitat to be preserved or created shall contain at least the same acreage of suitable nesting habitat for the tricolored blackbird as the amount of nesting habitat acreage lost, and the suitability of that habitat for nesting must be verified by a qualified biologist and reviewed and approved by the County Department of Planning and Development. A habitat protection easement ensuring that the use and development of the compensatory mitigation area shall be consistent with this purpose in perpetuity shall be granted by the Applicant to the County or other qualified entity approved by the County.	
Impact 3.4-9: Project activities would result in adverse effects on other special-status and protected birds and their habitat.	**Mitigation Measure 3.4-9:** The Applicant shall implement the following measures prior to any ground disturbance, vegetation removal, or other activities involving habitat impacts or movement of Project personnel, vehicles, or heavy equipment for construction, for the start of mining activities associated with each new mining phase, and for the start of reclamation activities to ensure that active nests, eggs, and young of protected birds are not lost as a result of Project activities. a. To the extent feasible, construction, operational, and reclamation activities that involve vegetation removal or ground-breaking, or that occur near wooded or forested habitats likely to support large numbers of nesting birds, shall be initiated during the nonbreeding season for birds (generally September 1 through January 31). If these activities are scheduled to take place outside the nesting season, impacts on active nests of birds protected under the MBTA and California Fish and Game Code will be avoided. b. Prior to the initiation of any ground disturbance, vegetation removal, or other activities involving habitat impacts or movement of Project personnel, vehicles, or heavy equipment for Project activities that occur between February 1 and August 31, a qualified biologist retained by the Applicant shall conduct preconstruction surveys for nesting birds. The survey will cover the portions of the Project site where construction/operations activities will be initiated as well as a 1-mile buffer for nesting eagles (in the event that eagles may nest in the vicinity during the Project's lifetime), a 250-foot buffer for other raptors, and a 100-foot buffer for non-raptors (other than tricolored blackbirds, which are addressed in Mitigation Measures 3.4-8a and 8b). During each survey, the qualified biologist will inspect all potential nesting habitats (e.g., trees, shrubs, grasslands, wetlands, and other nesting substrate) within direct impact areas and the aforementioned buffers for active nests (i.e., nests with eggs or young). The survey will be conducted no more than two calendar days prior to the start of the construction or operational	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	activity. To avoid last-minute changes in schedule that may occur if an active nest is found, the Project Applicant may also conduct a preliminary survey more than two calendar days before construction. c. If an active nest is found, a qualified biologist will determine the extent of a disturbance-free buffer zone to be established around the nest to ensure that it is not disturbed during Project implementation. The buffer distance is measured as the straight-line distance between an active nest and the activity. No Project-related activities that could physically disturb the nest, or any new Project-related activities (i.e., activities that were not ongoing when the nest was established) near the nest, will be performed within the buffer until the young have fledged or the nest has been determined to be inactive by a qualified biologist. Standard buffers are typically 100 feet for non-raptors and 250 feet for raptors other than eagles (for which the buffer may be up to 1 mile). A qualified biologist may determine that a reduced buffer is acceptable, taking into account dense vegetation, topography, or structures that will block Project activities from view; the life history and behavior of the bird species in question; and the nature (such as amount of noise, ground disturbance, or activity of personnel and equipment) of the proposed activity. If a reduced buffer is implemented, the qualified biologist will monitor bird behavior during work activities to the degree necessary to determine whether the buffer should be increase.	
Impact 3.4-10: Project activities would result in adverse effects on special-status bats.	**Mitigation Measure 3.4-10a:** The Applicant shall implement the following measures prior to any ground disturbance, vegetation removal, or other activities involving habitat impacts or movement of Project personnel, vehicles, or heavy equipment for construction or for the start of mining activities associated with each new mining phase to ensure that active pallid bat maternity roosts are not destroyed or disturbed as a result of Project activities. 1. A qualified biologist retained by the Applicant shall conduct a habitat assessment of any riparian or oak woodland within the Project area for high-quality pallid bat roost sites prior to the start of any activities that will result in the removal of trees, use of heavy equipment, or night lighting. The habitat assessment shall include all impact areas plus a surrounding 150-foot buffer. If the habitat assessment concludes that any trees proposed for removal, or within 150 feet of areas where heavy equipment will be operated or night lighting will occur, provide high-quality roosting habitat for pallid bats (e.g., large cavities), the qualified biologist shall conduct a focused emergence survey to determine whether the roost is occupied. The survey shall be performed within 15 days prior to the start of construction or operations activities in a given Project phase. The survey shall include monitoring of suitable cavities at dusk, on a warm, dry evening when bats would emerge, to determine whether bats exit the roosts. Surveys may necessitate multiple qualified biologists and the use of acoustic detection devices to ensure that any pallid bats present are detected. If no pallid bats are detected emerging during the survey, no further measures are necessary. If pallid bats are detected during the survey, the qualified biologist will identify an appropriate buffer to be maintained around the roost during the maternity season (April 1 through July 31). The dimensions of the buffer will be determined based on the nature of the construction or operational activities proposed near the roost tree, the presence of dense vegetation or topography between the Project activities and the roost, and any other relevant factors. No new activities (i.e., activities that were not ongoing when the maternity season began) will occur within the buffer around the roost tree during the maternity season.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	2. Pallid bat roost sites will be avoided and buffered, even outside the maternity season, if feasible. If it is infeasible to avoid the removal of a roost tree, whenever feasible the tree shall be removed only outside the maternity roost season and during seasonal periods of bat activity, when bats would be best able to find alternative roost sites. Thus, whenever feasible tree removal would occur only August 1 through October 15 or during March. Removal of these trees shall occur under the supervision of a qualified biologist via a two-phased process over two consecutive days. In the afternoon of the first day, limbs and branches shall be removed by a tree cutter using chainsaws only. Limbs with cavities, crevices, or deep bark fissures shall be avoided, and only branches or limbs without those features shall be removed. This disturbance would cause bats to leave the roost that evening. On the second day, the entire tree shall be removed. **Mitigation Measure 3.4-10b:** If a tree (or any other structure) containing a pallid bat maternity roost must be removed as part of the Project, a qualified biologist shall design and determine an appropriate location, on Sargent Ranch, for an alternative roost structure, based on the location of the original roost and habitat conditions in the vicinity. The roost structure shall be built to specifications as determined by a qualified biologist, or it may be purchased from an appropriate vendor, though the design must be approved by a qualified biologist. The structure shall be placed as close to the impacted roost site as feasible, though it will be located far enough from future Project activities so as to avoid disturbance of bats using the roost. The Applicant shall monitor the roost for three years or until occupancy is determined (whichever occurs first) to determine use by bats and submit annual reports verifying monitoring results to the County Department of Planning and Development Department.	
Impact 3.4-11: Project activities would result in adverse effects on mountain lions and their habitat.	**Mitigation Measure 3.4-11:** The Applicant shall implement Mitigation Measures 3.4-4c, 3.4-5b, and 3.4-15.	Less than Significant
Impact 3.4-12: Project activities would result in adverse effects on San Francisco dusky-footed woodrats and their habitat.	**Mitigation Measure 3.4-12a:** The Applicant shall implement Mitigation Measure 3.4-4b. **Mitigation Measure 3.4-12b:** The Applicant shall implement the following measures prior to any ground disturbance, vegetation removal, or other activities in riparian or oak woodland for construction or for the start of mining activities associated with each new mining phase to ensure that impacts to active nests of woodrats as a result of Project activities are minimized. No more than 15 days prior to initial vegetation removal or ground disturbance within suitable habitat for the San Francisco dusky-footed woodrat, for each phase of construction and mining, a preconstruction survey for woodrat nests shall be conducted by a qualified biologist retained by the Applicant. The survey shall consist of walking through all areas of suitable habitat within the Project work area looking for woodrat nests, both on the ground and in oak trees. 1. All woodrat nests detected within the survey area shall be flagged and mapped. 2. A minimum 10-foot buffer should be maintained between Project construction activities and each nest to avoid disturbance. A smaller buffer may be allowed if, in the opinion of a qualified biologist, removing the nest would be a greater impact than that due to Project activities. 3. If avoidance of active woodrat nests is not feasible (e.g., the nest is in the Project disturbance area) the woodrats shall be evicted from their nests prior to the removal of the nests and onset of ground-disturbing activities to avoid injury or mortality of the woodrats. The eviction of woodrats	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	and dismantling of woodrat nests shall begin no earlier than one hour before sunset to allow woodrats to escape under cover of dusk and avoid predators. A qualified biologist shall disturb the woodrat nest to the degree that all woodrats leave the nest and seek refuge outside of the Project activity area. Subsequently, the nest sticks shall be relocated; these materials will be gathered onto a tarp and then piled at the base of a nearby tree or shrub outside of the activity's impact area. The spacing between relocated nests shall not be less than 20 feet, if feasible, to avoid over-crowding. 4. If, during dismantling of a woodrat nest, young woodrats are detected, the nest will be left in place. Qualified biologists will revisit the nest after 3 days to determine whether it is still active, or whether the mother relocated the young to another area. Once the nest is determined to be inactive or the young are large enough to disperse on their own, the nest will be dismantled and the nest materials relocated.	
Impact 3.4-13: Project activities would result in adverse effects on American badgers and their habitat.	**Mitigation Measure 3.4-13:** The Applicant shall implement the following measures prior to any ground disturbance, vegetation removal, or other activities in natural (i.e., undeveloped) habitat for construction or for the start of mining and reclamation activities associated with each new mining phase to ensure that injury or mortality of American badgers as a result of Project activities is avoided. a. Preconstruction surveys (occurring prior to all phases of ground disturbance or construction activity throughout the Project life) conducted for burrowing owls shall also be used to determine the presence or absence of badgers within the Project area, as well as within a 300-foot buffer around the Project area. If an active badger den is identified during preconstruction surveys, a construction-free buffer of 300 feet (or an alternate distance determined by a qualified biologist in consultation with CDFW) shall be established around the den if feasible. If a 300-foot buffer is infeasible, then the qualified biologist and CDFW shall determine whether a reduced buffer is preferable to evicting the badger (which would likely be the case for a single badger). b. During the period September 1 through the end of February, when young are unlikely to be present in a burrow, if a badger den is located within the Project footprint, the den shall be excavated by a qualified biologist to cause the badger to leave the area. Because badgers are known to use multiple burrows in a breeding burrow complex, multiple dense may need to be excavated. Ground disturbance can proceed only after all dens within the impact area have been excavated to ensure that no badgers are present below-ground/ c. During the period March 1 through August 31, when young could be present within a burrow, a biological monitor shall be present on the site during Project activities that occur within 500 feet of any known or suspected badger den to ensure the buffer is adequate to avoid direct impacts to individuals or den abandonment. Such monitoring shall occur until it is determined that young are of an independent age such that Project development would not result in harm to individual badgers. Once the biological monitor has determined that young badgers are old enough to leave their natal den or have vacated the site, the burrows can be excavated, and ground disturbance can proceed.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Impact 3.4-14: Project activities would result in substantial adverse effects on jurisdictional wetlands, other waters, and riparian habitats.	**Mitigation Measure 3.4-14a:** Prior to issuance of any development permits, the Project Applicant shall compensate for the estimated loss of any jurisdictional wetlands, ponds, creeks, and riparian habitat that would occur over the Project's permitted term through on-site or off-site restoration, creation, or enhancement of similar or higher-quality habitat, the purchase of mitigation credits, or a combination of these two approaches. A qualified biologist shall determine the extent of impacts based on the acreage of overlap of Project construction and operations/mining areas on wetlands, ponds, and riparian habitat, and the linear footage of creek channel within those Project impact areas. A minimum of a 1:1 (on an acreage basis for wetlands, ponds, and riparian habitat and a linear footage basis for creeks) replacement-to-loss ratio for in-kind habitat (or equivalent or greater as determined in coordination with the USACE, CDFW, and RWQCB during permitting) is required. Enhancement of existing, low-quality habitats (rather than restoration or creation) is acceptable if a substantial increase in ecological functions and values can be achieved, as determined by a qualified biologist in coordination with the USACE, CDFW, and RWQCB. If mitigation is to be satisfied through purchase of mitigation credits in an agency-approved mitigation bank, such as the Pajaro River Mitigation Bank (for wetlands), proof of the purchase of credits shall be provided to the County Department of Planning and Development prior to the start of ground-disturbing activities. If mitigation is to be satisfied through Project-specific habitat restoration, creation, or enhancement, the mitigation shall be described in an HMMP, which shall be prepared by a qualified biologist retained by the Applicant and submitted to the County Department of Planning and Development for review and approval prior to the start of ground-disturbing activities. At a minimum, the HMMP shall include the following: • A summary of Project impacts to jurisdictional habitats; • The location of all restoration, creation, or enhancement activities; • Detailed description of all restoration, creation, or enhancement activities; • Evidence of a suitable water budget to support any restored, created, or enhanced aquatic and riparian habitats; • The species, amount, and location of plants to be installed in the created habitats; • The time of year for planting and the method for supplemental watering during the establishment period; • Management and maintenance activities, such as weeding of invasive plants, providing for supplemental water, and repair of water delivery systems; • The monitoring period, which shall not be less than five years. • Criteria for mitigation efforts to be deemed a success; at a minimum, success for vegetated wetlands and riparian habitats would include at least seventy-five percent (75%) cover by native vegetation, or seventy-five percent (75%) survival of planted or seeded native riparian vegetation, within the target mitigation acreage by the end of year five;	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• Adaptive management procedures that accommodate the uncertainty that comes with restoration projects. These include, but are not limited to, measures to address colonization by invasive species, unexpected lack of water, excessive foraging of installed plants by native wildlife, and variable climatic conditions. This section will also describe the process by which adaptive management decisions will be made and implemented; • A description of the financial mechanisms for funding of all monitoring activities and ensuring that the created aquatic and riparian habitats shall be preserved and managed in perpetuity. **Mitigation Measure 3.4-14b:** The Project Applicant shall compensate for any loss of riparian habitat that occurs along Sargent Creek adjacent to or downstream from Phases 3 and 4 as a result of a reduction in streamflow as a result of mining. A baseline survey shall be conducted prior to initiation of any earth-moving in Phases 3 and 4 to document the areal extent of woody riparian vegetation, including mapping of canopy and native understory vegetation separately, within the entire reach of Sargent Creek downstream from Pits 3 and 4. Mapping of these same parameters shall then be conducted in the year following completion of reclamation in Phases 3 and 4 to determine whether any decline in the overall extent of woody riparian canopy or native understory within this reach has occurred and is caused by the Project. If any decline has occurred and is caused by the Project, compensatory mitigation shall be provided via the restoration, creation, or enhancement of riparian habitat, purchase of mitigation credits, or a combination of these two methods as described in Mitigation Measure 3.4-14a (or as otherwise required to provide equivalent or greater mitigation by regulatory agencies as a condition of Project permits), except that compensatory mitigation for temporary changes in hydrology during mining shall be provided at a minimum ratio of 1.5:1 (mitigation:impact), on the basis of the acreage of decline in canopy or native understory, whichever is greater, that has occurred since the baseline survey. This ratio is higher than the 1:1 replacement ratio specified in Mitigation Measure 3.4-14a due to the temporal loss in riparian habitat functions and values that will have occurred over the 20-30 year period and due to the higher-habitat quality along lower Sargent Creek. Unless all mitigation is provided via purchase of credits from a mitigation bank, an HMMP describing Project-specific riparian habitat mitigation shall be prepared when the magnitude of the impact is known (i.e., after completion of Phases 3 and 4 mining) and the mitigation location is known. Aside from the mitigation ratio and the timing of preparation of the HMMP, mitigation shall occur exactly as described in Mitigation Measure 3.4-14a.	
Impact 3.4-15: Implementation of the Project would interfere substantially with wildlife movement.	**Mitigation Measure 3.4-15:** The Applicant shall implement the following measures to reduce the impacts of Project construction, operation, and reclamation on wildlife movement. 1. Fencing in and around the Project site shall be designed and configured to facilitate wildlife movement around areas of intensive Project activity, such as facilitating movement around the processing plant. Areas where fencing shall be designed to facilitate wildlife movement include fencing along the outer edge of the Tar Creek riparian corridor (on both sides of the creek); the eastern site boundary (along the edge of the existing railroad tracks), including the area north of Tar Creek adjacent to the existing residence; the southern boundary of the processing plant area; and areas immediately west and northwest of the processing plant area that would not be occupied by mining activity. Such fencing shall incorporate the following components.	Significant and Unavoidable

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	a. Barbed-wire fencing shall consist of no more than five strands. b. To facilitate wildlife crossing over and under fencing (except for fencing around the main plant, which should not be designed for wildlife entry), a gap of at least 20 inches shall be provided between the ground and the bottom wire, board, or rung to allow fawns to pass under the fencing, and the top wire shall be no more than 40 inches high to allow more mature deer to jump over. c. Where fencing is not necessary for livestock management, a smooth (instead of barbed) wire shall be used for the top and/or bottom strands. d. At intervals of no more than every 200 feet, a segment of fencing at least 8 feet long with wooden poles instead of a top strand of wire shall be provided to allow animals such as gray foxes, mountain lions, and bobcats to more easily cross over the fencing. e. No new fencing shall be installed along the entrance road or around the bridge over Tar Creek, with the exception of a gate to allow control of vehicle access to the site. 2. Fencing at least 10 feet in height shall be installed around as much of the processing plant as possible (on the north side adjacent to Tar Creek and as much of the east side as is feasible with construction of the rail spur), and screening fabric shall be installed on that fencing to prevent light spillover and block visible signs of physical activity (movement of people and equipment) from view of wildlife outside the processing plant. The fencing details and specifications shall be included in the Wildlife-Compatible Fencing Plan (described above) and reviewed and approved by the County Department of Planning and Development. 3. The bridge over Tar Creek shall be designed to maximize open space where wildlife can cross under the bridge (e.g., spaces between the abutments and top of bank shall be left as open as possible). No new fencing shall be added at or around the bridge. Engineering plans for the Tar Creek bridge shall be provided to the County Department of Planning and Development as part of the processing plant building per or any grading permit submittal, whichever comes first. 4. Along Old Monterey Road between its junction with U.S. 101 and the entrance to the Project site, the Applicant shall install signs shall be placed every ½-mile warning drivers to watch for animals and to observe the speed limit, which shall be no more than 25 miles per hour to minimize vehicle collisions and reduce vehicular noise. Such signage shall also be placed along the conveyor belt access/maintenance road, indicating a speed limit of no more than 15 miles per hour. 5. At intervals of no less than every 1,000 feet, the conveyor shall be elevated so that the bottom of the conveyor belt structure is at least 8 feet clear above the ground to facilitate movement of larger animals under the belt.	
Impact 3.4-16: Project activities would conflict with County ordinances and policies intended to protect biological resources.	**Mitigation Measure 3.4-16a:** 1. Prior to removal of any oaks, or any other trees protected under Section Sec. C16-3 of the County's Tree Preservation and Removal Ordinance, from the Project area, a tree removal plan and arborist report shall be submitted identifying the species type, acreage, diameter, and amount of canopy of oak trees or other protected trees proposed for removal. The report shall also	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	designate oak woodland as high-quality or medium-quality for the purposes of establishing the mitigation ratio. The arborist report shall be prepared by an I.S.A. Certified Arborist, Registered Professional Forester, or another professional approved by the County Department of Planning and Development. Reports may be submitted separately for the construction phase and by Project mining phase, prior to the start of tree removal within each phase. 2. The Applicant shall implement both of the following two measures to compensate for the loss of any oak woodland habitat to ensure that it complies with the County of Santa Clara Planning Office Guide to Evaluating Oak Woodlands Impacts. • Planting Replacement of Oak Trees. New oak trees shall be planted on the Project site to compensate for lost oaks, though the planting of new oak trees shall not fulfill more than fifty percent (50%) of the mitigation requirement for the Project. The objective of tree planting shall be to establish new oak woodland at a ratio of 2:1 or 3:1 based on the condition of the oak woodland habitat: 2:1 replacement is required for medium-quality oak woodland habitat; and 3:1 replacement is required for high-quality oak woodland habitat. The following standard mitigation ratios shall be used, unless a different ratio is approved by the County Department of Planning and Development based on site-specific characteristics associated with the mining phases: o For the removal of one small tree (5 to 18 inches): two 24-inch boxed trees or three 15-gallon trees. o For the removal of 1 medium tree (18 to 24 inches): three 24-inch boxed trees or four 15-gallon trees. o For the removal of a tree larger than 24 inches: four 24-inch boxed trees or five 15-gallon trees. Tree replacement shall be with like species unless alternate species are approved by the County. A Tree Planting and Maintenance Plan shall be submitted for County review and approval showing species, size, spacing and location of plantings and the location and species of established vegetation. Tree plantings shall be monitored for five years following planting, and a survival rate of seventy-five percent (75%) shall be required. Should the planted trees fail to meet the established performance and survival criteria, the Project Applicant shall be responsible for additional plantings and management activities necessary to ensure the long-term success of planted mitigation trees. • Conservation Easement. For mitigation of the remaining oak woodlands impacts not mitigated by planting replacement oak trees, existing native oak trees on or off the Project area shall be protected from future development through a conservation easement in perpetuity or fee title dedication to the County or other qualified entity approved by the County, through inclusion in the conservation easement referenced in Mitigation Measure 3.5-4b Oak woodland offered as mitigation must be configured in such a manner as to best preserve the integrity of the oak ecosystem and minimize the	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	ratio of edge to area. Priority should be given to conserving oak habitat adjacent to existing woodlands under conservation easements, public lands, or open space lands. The protection of existing oak woodlands through conservation easements shall mitigate for the loss of oaks at a ratio equal to 2:1 (for medium quality oak woodland habitat) or 3:1 (for high quality oak woodland habitat) as determined by the County of Santa Clara Department of Planning and Development. Land proposed as mitigation, when viewed with adjacent protected conservation land, should not result in conserved parcels of less than one acre. **Mitigation Measure 3.4-16b:** The Applicant shall provide mitigation to compensate for impacts to ordinance trees in compliance with Section Sec. C16-7 of the County's Tree Preservation and Removal Ordinance. Mitigation provided per Mitigation Measure 3.4-16(2) for oak tree replacement will satisfy mitigation requirements for impacts to ordinance-sized oak trees. For other tree species, the Applicant will prepare a replanting and/or re-vegetation plan for all ordinance-sized trees to be removed. Replacement trees shall be of a like kind and species of tree removed, if native and feasible, or of a kind and species to be determined by the Planning Department. The replacement tree(s) need not be in the same location of the tree removed, but the replacement trees will be planted somewhere on Sargent Ranch. Replacement tree size and ratio shall be as follows: o For the removal of one small tree (5 to 18 inches): two 24-inch boxed trees or three 15-gallon trees. o For the removal of 1 medium tree (18 to 24 inches): three 24-inch boxed trees or four 15-gallon trees. o For the removal of a tree larger than 24 inches: four 24-inch boxed trees or five 15-gallon trees.	
Impact 3.4-17: The Project activities could contribute to the cumulative loss of special-status plant species.	**Mitigation Measure 3.4-17**: The Applicant shall implement Mitigation Measures 3.4-1a, b, and c.	Less than Significant
Impact 3.4-18: The proposed Project could contribute to cumulative increases in nitrogen emissions that could result in adverse effects on habitat for the Bay checkerspot butterfly and rare serpentine-associated plants located off-site.	None required.	Less than Significant
Impact 3.4-19: Project activities could contribute to a cumulative degradation of habitat for special-status fish.	**Mitigation Measure 3.4-19:** The Applicant shall implement Mitigation Measure 3.4-3.	Less than Significant
Impact 3.4-20: Project activities could contribute to cumulative harm to protected terrestrial species and loss of their habitats.	**Mitigation Measures 3.4-20:** The Applicant shall implement Mitigation Measures 3.4-1c, 3.4-4a through 3.4-4c, 3.4-5a and 3.4-5b, 3.4-6, 3.4-7, 3.4-8a and 3.4-8b, 3.4-9, 3.4-10a and 3.4-10b, 3.4-11, 3.4-12a and 3.4-12b, and 3.4-13.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Impact 3.4-21 The Project activities could contribute to the cumulative loss of jurisdictional wetlands, other waters, and riparian habitats.	**Mitigation Measures 3.4-21:** The Applicant shall implement Mitigation Measures 3.4-1c, 3.4-14a and 3.4-14b.	Less than Significant
Impact 3.4-22: The Project activities could contribute to the cumulative impairment of wildlife crossings.	**Mitigation Measure 3.4-22:** The Applicant shall implement Mitigation Measure 3.4-15.	Significant and Unavoidable
Impact 3.4-23: The Project activities could contribute to the cumulative loss of oaks and oak woodlands.	**Mitigation Measures 3.4-23**: The Applicant shall implement Mitigation Measures 3.4-1b, 3.4-1c, 3.4-16a, and 3.4-16b.	Less than significant
Cultural and Tribal Resources		
Impact 3.5-1: The project would cause a substantial adverse change in the significance of known historical or archaeological resources.	**Mitigation Measure 3.5-1** a. **Resource Avoidance/Protection.** Roads used by the Project, such as existing roads that cross identified resources (CA-SCL-577/H and CA-SCL-578/H) during construction, operations, and reclamation. If resources cannot be avoided, but grading shall be capped through use of durable materials to ensure that wear and tear by vehicles of the road surface does not disturb the road bed and damage archaeological deposits, or burials located underneath. No ground disturbance below the existing grade shall occur. In addition, fencing shall be used to prevent vehicles from leaving the access roads where they are adjacent to identified resource sites. The Applicant shall submit archaeological and historic resource protection plans to the County Department of Planning and Development for review and approval prior to any project construction. b. **Archaeological Testing Program for Known and Unrecorded Resources.** For areas where ground disturbance would occur, the Applicant shall retain a qualified archaeological consultant to prepare an Archaeological Testing Program (ATP) that covers each of the three project phases: construction, mining, and reclamation. The ATP shall identify the type of archaeological resources that could potentially be disturbed by the proposed Project, the testing method to be used, and the locations recommended for testing based on sensitivity mapping for areas identified as having high to highest sensitivity, as well as and the location of known resources. The purpose of the ATP will be to determine whether archaeological materials are present and evaluate whether the materials constitute an historical resource. The ATP shall focus on areas that are of high to highest sensitivity, as well as those that are in the vicinity of CA-SCL-578/H, and would apply during all phases of the project. Disturbance shall not occur in areas where newly-discovered significant cultural resources are identified; newly-discovered significant cultural resources shall be avoided if feasible, with data recovery only if avoidance is not feasible, consistent with CEQA Guidelines § 15126.4(b). The Applicant shall submit the draft ATP to the County Department of Planning and Development and to a designated representative of the Amah Mutsun Tribal Band for review. The County and Tribal representative shall have 45 days to review and comment on the draft ATP. The qualified	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	archaeological consultant shall then update the draft ATP to incorporate relevant comments and resubmit a final ATP to the County and Tribal representative. Testing shall not begin until the County Department of Planning and Development has approved the final ATP. Testing shall be conducted by the archaeological consultant and observed by a monitor designated by the Amah Mutsun Tribal Band in accordance with the approved Archaeological Monitoring Program (AMP), as described further in Mitigation Measure 3.4-1c. At the completion of activities associated with the ATP, the archaeological consultant shall submit a written report of findings to the County of Santa Clara Department of Planning and Development and Tribal representative for review. If, based on the ATP, the archaeological consultant finds that potentially eligible archaeological resources are present, the archaeological consultant shall consult (as part of one in-person meeting or conference call) with the County Department of Planning Development and the Tribal representative to determine if additional measures are warranted during testing. Additional measures that may be undertaken include specialized archaeological testing methods and/or an archaeological data recovery program. c. **Archaeological Monitoring Program for Known and Unrecorded Resources.** Following completion of the ATP, the Applicant shall prepare and the County Department of Planning and Development shall implement an Archaeological Monitoring Program (AMP) in consultation with the archaeological consultant and the Tribal representative. The AMP shall include the following: • Prior to any ground-disturbing activities related to the development of the Project throughout the Project life, including access roads, the free-span bridge over Tar Creek, mining areas, and processing facilities, the following shall occur: i. The County, in consultation with the archaeological consultant and Tribal representative, shall determine what Project activities shall be monitored. ii. All ground-disturbing activities (outside of the low sensitivity areas of Phases 1 and 2), such as demolition, excavation, grading, utilities installation, etc., shall require archaeological and Native American monitoring because of the risk these activities pose to potential buried archaeological resources and to their depositional context. • The Native American monitor shall be designated/approved by the Amah Mutsun Tribal Band to monitor ground-disturbing activities at the Project proponent's expense. The terms of Native American monitoring shall be determined prior to the onset of monitoring activities, including requirements for prior notice of areas to be disturbed and provisions if a designated monitor is unavailable. The Native American monitor shall be notified at least 30 days prior to onset of construction, and at least 14 days in advance of when and where new ground disturbance will occur. The Native American monitor shall be present at all times that the archaeological monitor is present, unless the Native American monitor determines that his/her presence is not required at a particular location. If the Native American monitor does not arrive or is not present as scheduled, Project work may continue in the monitor's absence..	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• The archaeological monitor and Native American monitor shall advise Project contractors to be alert for evidence of archaeological resources, how to identify archaeological resources, and of appropriate protocol in the event of discovery of an archaeological resource. • The archaeological monitor and Native American monitor shall be present on the Project area according to a schedule agreed upon by the archaeological consultant and County (generally during ground-disturbing activities) until the County has, in consultation with the Project archaeological consultant and Tribal representative, determined that Project construction activities in the particular disturbance area could have no effects on significant archaeological deposits. • The archaeological monitor shall record and be authorized to collect soil samples and material of archaeological or historical interest as warranted for analysis. • If an intact archaeological deposit is encountered, ground-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall temporarily redirect ground-disturbing activities until the deposit is evaluated. The archaeological consultant shall immediately notify the County Department of Planning and Development of the encountered archaeological deposit. The archaeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit, and present the findings of this assessment in a report submitted to the County and Tribal representative. Should archaeological resources with ties to Native Americans be discovered, the archaeological monitor shall immediately notify the County Coordinator of Indian Affairs. The draft AMP shall be submitted to the County Department of Planning and Development and to a designated representative of the Amah Mutsun Tribal Band for review. The County and Tribal representative shall have two weeks to review and comment on the draft AMP. The qualified archaeological consultant shall then update the draft AMP to incorporate relevant comments and resubmit a final AMP to the County and Tribal representative. Testing shall not begin until the County has approved the final AMP. d. **Archaeological Data Recovery Program for Known and Unrecorded Resources** If an eligible archaeological resource is determined to be present as part of the ATP or AMP, then the Applicant shall implement an archaeological data recovery plan (ADRP) to be prepared by the Applicant. The archaeological consultant, County Department of Planning and Development staff, and Amah Mutsun Tribal Band representative shall consult (as part of one conference call or in-person meeting) on the scope of the ADRP prior to preparation of a draft ADRP. The ADRP shall be consistent with the requirements of CEQA Guidelines Section 15126.4(b)(3). It shall identify how the proposed data recovery program will preserve the relevant information the archaeological resource contains, identify what scientific/historical research questions are applicable to the resource, what data classes the resource possesses, and how the data classes would address applicable research questions. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. The scope of the ADRP shall also include the following elements:	

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	• Descriptions of proposed field strategies, procedures, and operations; • Additional measures that should be undertaken if Native American resources are unearthed; • Description of selected cataloguing system and artifact analysis procedures; • Description of and rationale for field and post-field discard and deaccession policies; • Consideration of an off-site public interpretive program during the course of the ADRP; • Recommended security measures to protect the archaeological resource from vandalism, looting, and non-intentionally damaging activities; • Description of proposed final report format and distribution of results; and • Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities. The draft ADRP shall be submitted to a designated representative of the Amah Mutsun Tribal Band and to the County Department of Planning and Development for review. The Tribal representative and County shall have two weeks to review and comment on the draft ADRP. The qualified archaeological consultant shall then update the draft ADRP to incorporate relevant comments and resubmit a final ADRP to the County and Tribal representative. Data recovery shall not begin until the County has approved the final ADRP. e. **Final Archaeological Resources Report for Known and Unrecorded Resources.** The Applicant shall retain the services of the archaeological consultant, who shall submit a Draft Final Archaeological Resources Report (FARR) to the County Department of Planning and Development describing the historical significance of discovered archaeological resources and describing the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery programs undertaken. Information that may put at risk (such as resource locations) any archaeological resource shall be provided in a separate removable insert within the final report. Once approved by the County, copies of the FARR (including any formal site recordation forms and/or documentation for nomination to the National Register of Historic Places and California Register of Historic Resources) shall be distributed to the California Archaeological Site Survey Northwest Information Center, County of Santa Clara Department of Planning and Development, and Tribal representative.	
Impact 3.5-2: Implementation of the proposed Project could damage unrecorded subsurface prehistoric and historic archaeological resources.	**Mitigation Measure 3.5-2:** Implement Mitigation Measure 3.5-1.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Impact 3.5-3: The Project could disturb any human remains, including those interred outside of dedicated cemeteries.	**Mitigation Measure 3.5-3a:** Implement Mitigation Measures 3.5-1. **Mitigation Measure 3.5-3b:** In the event that human remains are discovered during ground-disturbing activities and/or grading at the site, the Applicant shall stop all activity within a 50-foot radius of the find. The County Coroner shall be notified immediately and shall make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is necessary (as required by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98, Title 14 California Code of Regulations Section 15064.5(e), and County Ordinance Number B6-18). If the remains are determined to be Native American, the Coroner shall notify the NAHC within 24 hours of this determination. Once the NAHC identifies the most likely descendants, the descendants shall make recommendations regarding proper burial (including the treatment of grave goods). No further disturbance of the site shall be made except as authorized by the County Coordinator of Indian Affairs and NAHC in accordance with the provisions of state law and the County Ordinance.	Less than Significant
Impact 3.5-4: The Project would cause a substantial adverse change in the significance of tribal cultural resources.	**Mitigation Measure 3.5-4a:** Implement Mitigation Measures 3.5-1 and 3.5-3b. **Mitigation Measure 3.5-4b:** To partially offset and compensate for impacts to the three specific TCRs, and to compensate for the loss and disturbance of those portions of the physical landscape of the JTCL that are within the Project site, the property owner/applicant shall record a conservation easement in accordance with Civil Code section 815 et seq. The conservation easement shall be conveyed by the property owner/applicant to any entity identified in Civil Code section 815.3, and verified by the County prior to any ground disturbance. The conservation easement shall include a minimum two acres for every one acre disturbed by the Project (total disturbed acreage of the Project is 403.3 acres), and shall include the Project site itself upon completion of reclamation. In addition, the conservation easement shall include an area outside the Project site of comparable size to the acreage disturbed by the Project. The boundaries of the offsite easement shall be determined by the County in consultation with the Amah Mutsun Tribal Band, and shall include areas and/or resources that are of particular important in their contribution to the JTCL, such as identified tribal cultural resources, riparian areas and /or specific oak trees. The conservation easement shall prohibit all uses and development that are not already legally occurring prior to Project approval, except for environmental restoration activities, including biological resource compensatory mitigation measures identified in this EIR and restoration of the JTCL, which may be allowed with the appropriate governmental approval and permits. Consistent with Public Resources Code section 21084.3(b)(3), this mitigation measure will ensure the land within the conservation easement is substantially preserved and/or restored in its current natural state, thereby preventing development or disturbance from new uses that could adversely affect the JTCL.	Significant and Unavoidable
Impact 3.5-5: The Project would cause a substantial adverse change in the significance of the Juristac Tribal Cultural Landscape.	**Mitigation Measure 3.5-5a**: Implement Mitigation Measures 3.5-1, 3.5-3b and 3.5-4b.	Significant and Unavoidable

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	Mitigation Measure 3.5-5b: Prior to commencement of any vegetation removal or ground disturbance, the Project Applicant shall prepare and submit, to the satisfaction of the Director of Planning, or Director's designee, evidence that the following actions have been satisfied: i. After seeking consultation with the Amah Mutsun Tribal Band (AMTB), refine the plant list provided in Appendix F of Gathering Voices Past and Present (2021) to identify those plants that contribute to the significance of the JTCL as a Tribal Cultural Resource, and that could be present within the Project site. ii. Prepare a survey of the Project site to identify the plant species identified in the plant list. iii. Determine the extent of Project impacts based on the number of individuals impacted and the acreage of habitat occupied by each plant species on the plant list. The survey shall be conducted by a qualified plant biologist. iv. Plant species: (a) For species on the plant species that are also federal or state-listed special-status plant species, implement Mitigation Measure 3.4-1, which requires compensatory mitigation for the loss of special-status plants. (b) For species on the plant list that are not federal or state-listed special-status, compensatory mitigation shall be provided by preservation and management of another, existing on-site or off-site population within the JTCL boundary. Habitat occupied by the affected species shall be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acre preserved for each occupied acre affected for the affected plant species). v. In addition to 1:1 preservation as described in 3.5-5b.iv, the restoration area shall be enhanced by transplanting individual plants or seeds from the Project site as appropriate. vi. Plant species in the preservation areas shall be monitored using specific, objective final criteria and performance criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule. At a minimum, performance criteria shall include demonstration that any plant population fluctuations over the monitoring period do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be attributed to management (i.e., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management).	
Impact 3.5-6: The Project could contribute to cumulative adverse changes in known historical or archaeological resources.	**Mitigation Measure 3.5-6:** Implement Mitigation Measure 3.5-1.	Less than Significant
Impact 3.5-7: The Project could contribute to cumulative adverse changes in unrecorded subsurface prehistoric and historic archaeological resources	**Mitigation Measure 3.5-7:** Implement Mitigation Measure 3.5-1.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Impact 3.5-8: The Project could contribute to cumulative disturbance of human remains, including those interred outside of dedicated cemeteries.	**Mitigation Measure 3.5-8:** Implement Mitigation Measures 3.5-1 and 3.5-3b.	Less than Significant
Impact 3.5-9: The Project could contribute to cumulative adverse changes in the significance of tribal cultural resources.	**Mitigation Measure 3.5-9:** Implement Mitigation Measures 3.5-1 and 3.5-3b, 3.5-4b and 3.5-5b.	Significant and Unavoidable
Energy		
Impact 3.6-1: Construction, operation and maintenance, and reclamation of the Project would increase the use of energy resources, but would not result in significant wasteful, inefficient, or unnecessary consumption of energy.	None required.	Less than Significant
Impact 3.6-2: Construction, operation and maintenance, and reclamation of the Project could conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	None required.	Less than Significant
Impact 3.6-3: The Project could contribute to cumulative increases in the energy use.	None required.	Less than Significant
Geology, Soils, and Paleontological Resources		
Impact 3.7-1: Seismic hazards could cause adverse effects including the risk of loss, injury, or death during a seismic event.	None required.	Less than Significant
Impact 3.7-2: Excavation of quarry pits and reclamation would increase the potential for slope instability and slope failure.	**Mitigation Measure 3.7-2a:** This mitigation measure applies to the mining pits during mining and reclamation. Throughout the mining operation and reclamation slope grading, the Applicant shall retain a licensed geotechnical engineer to inspect the mining area and monitor construction of the quarry cut slopes twice annually and each time a new 30-foot bench has been excavated. Upon completion of each inspection, the geotechnical engineer shall submit a report to the County and Applicant detailing observations of subsurface conditions, descriptions of potential in-slope failure mechanism (i.e., failure planes, faults, jointing, existing failure planes, and groundwater seepage) or any other concerns regarding the stability of the cut slopes. The geotechnical engineer shall prescribe remedial actions that shall be implemented by the Applicant. Remedial actions could include adjustments to proposed slope configurations (i.e., decreasing slope angle or attitude), additional groundwater seepage management, removal of failure-prone materials, and/or performing additional data collection and slope stability monitoring. After the report has been reviewed and approved by the County Department of Planning and Development, the Applicant shall implement the remedial actions in compliance with a timeline established by the County.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	Mitigation Measure 3.7-2b: This mitigation measure applies to the mining pits during mining. During quarry operation, the Applicant shall implement a combination of the following measures to ensure slope stability: • Localized layback, earth buttresses, and/or stabilization fills of individual slopes to accommodate for unfavorable bedding. This measure would be required when bedding is observed to be oriented and inclined and/or daylights toward the mining pit. This condition could indicate inherent instability in the slope. • Remedial grading to remove in-place clayey topsoil/colluvium below the proposed stockpiles. This measure would remove potentially unstable or weak topsoil and loose colluvium from the base of the stockpile to ensure the stockpile is founded on competent material, reducing the likelihood of failure. • Waste pile buttress fills or backfill to contain or mitigate surficial and/or minor translational failures. This measure would be implemented when beds are observed to be oriented and inclined and/or daylight toward the mining pit and appear to have the potential to fail. • For groundwater seepage, dewatering by horizontal drains, deep cutoff trenches, or gabion buttresses. Removal of groundwater would be necessary to reduce failure potential in a slope. Groundwater increases the potential of failure by adding weight to the slope and reducing the friction forces in soils and rock. Observation and inspection during excavation of the quarry pits by a California Certified Engineering Geologist retained by the Applicant shall occur at a minimum of twice per year or any time that mining operations encounter conditions that vary significantly from conditions described in the Project's geotechnical slope stability report, for the term that the quarry is operational. The Engineering Geologist shall submit a report for review and approval to the County of Santa Clara Department of Planning and Development recommending any additional operational measures deemed necessary to ensure slope stability. **Mitigation Measure 3.7-2c:** This mitigation measure applies to the mining pits during reclamation. Prior to reclamation slope grading, the Applicant shall develop proposed final slope configurations that address and improve the factors of safety (FS) that are less than 1.0 under seismic loading conditions. The Applicant shall demonstrate in its analysis, that a pseudo static FS of 1.0 or greater will be achieved by mitigation strategies such as placement of soil buttresses at the toe of slopes vulnerable to failure under seismic loading. In conjunction with Mitigation Measures 3.7-2a and 3.7 2b, the analysis and mitigation strategies prescribed by the measure would provide the supplemental information needed to demonstrate compliance with SMARA at reclamation.	
Impact 3.7-3: Activities associated with construction, mining and reclamation could result in accelerated erosion and loss of topsoil.	None required.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Impact 3.7-4: The site soils would not be incompatible with the proposed On-Site Wastewater Treatment System (OWTS).	None required.	Less than Significant
Impact 3.7-5: Project excavation and grading could adversely affect paleontological resources.	**Mitigation Measure 3.7-5:** This measure applies to construction of the Phase 3 and 4 conveyor belt and access road within areas mapped as Etchegoin Formation (Te) with a PFYC of 4 (high), as well as to all ground-disturbing activities (whether considered construction or operation) within the mining pits (Phases 1 through 4) and geotechnical setback areas. The Applicant shall retain a qualified paleontologist meeting Society of Vertebrate Paleontology (SVP) standards to oversee the preparation of a paleontological resources monitoring plan (PRMP). The PRMP shall be prepared prior to the start of construction and mining activities, reviewed and approved by the County Department of Planning and Development, and implemented by a qualified paleontologist. The PRMP shall provide guidance for paleontological field surveys, fossil sampling, spot checking/monitoring, reporting, curation, and on-call response to fossil discoveries that occur for the duration of the Project construction and operation. The PRMP shall detail the following components: a) **Worker Training.** The qualified paleontologist shall prepare and implement a worker training program to inform construction and mining personnel of the possibility for fossil discoveries. The training program shall provide an overview of the paleontological sensitivity of the site and the potential to uncover fossil remains. The training program shall instruct personnel to immediately inform their supervisor if any bones, teeth, or other substantial fossil remains are unearthed. In such a case, workers shall immediately cease activity within a 50-foot radius of the discovery site until a qualified paleontologist can examine and evaluate the find per item (b) below. Work may not resume in the discovery area until it has been authorized by the County. The training shall be provided to new personnel prior to beginning work on the site and such trainings should be coordinated with the site manager and should coincide with spot checking/sampling visits. Verification of training will be provided as an appendix to the annual report submitted to the County Department of Planning and Development described in item (f). b) **Evaluation and Salvage of Fossils.** If any bones, teeth, or other fossil remains are unearthed in the course of ground disturbance, work will cease as directed in item (a) and a qualified paleontologist will examine and evaluate the find. In the event that the qualified paleontologist deems the fossil significant according to SVP Guidelines (2010) and recommends it for curation, the qualified paleontologist shall propose salvage measures in consultation with the Applicant, and the salvage measures shall be reviewed and approved by the County Department of Planning and Development and shall be carried out by or under the direct supervision of the qualified paleontologist. Curation shall follow the process directed in item (e). c) **Paleontological Survey.** At least 30 days prior to the start of surface disturbance in any new portion of the Project site that is not low potential (e.g., at the beginning of the Project construction period, when construction on the Phase 3 and 4 access road and conveyor belt begins, or when excavation of a new mining phase begins), a paleontological survey shall be conducted by a qualified paleontologist for the area to be disturbed to allow for in situ documentation and collection of surficial fossils. Following each survey, a paleontological survey memorandum shall	Less than significant for construction; significant and unavoidable for operation.

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
	be prepared. The first survey memorandum prior to the start of construction shall be submitted immediately upon completion to the County Department of Planning and Development. Subsequent surveys during the life of the Project can be compiled and submitted as part of the annual paleontological mitigation report described in item (f). d) **Spot Checks During Mining.** A qualified paleontologist shall conduct periodic spot checks (at least six times per year) for the duration of mining activities that impact native Etchegoin Formation (Te), unnamed claystone (Tn), and Pleistocene older alluvium (Qoa). This includes all of Phases 1 through 4. The qualified paleontologist shall check for the presence of any recently uncovered macrofossils or layers that should be sampled for microfossils. The need for, frequency, and timing of the spot checks shall be outlined in the PRMP, and during implementation the actual need, frequency, and timing shall be based on the PRMP and coordinated with the Applicant based on real-time excavation activities and locations. The frequency of spot-checking efforts in a given portion of the quarry area may be reduced at the recommendation of the qualified paleontologist with approval from the County Department of Planning and Development if it is determined that only previously disturbed, imported, or Holocene-age alluvial sediments are being impacted, or if sediments are deemed to be non-conducive to fossil preservation. Dates and results of spot checks shall be recorded and reported as described in item (f). e) **Sample Identification and Curation.** The qualified paleontologist shall ensure that all fossils and bulk matrix samples collected at the Project site during work stoppages (if resources are found during ground disturbance), paleontological surveys, or spot checks are removed to a secure paleontological laboratory within 30 days of collection from the field for preparation to the point of identification and curation in accordance with SVP Guidelines (2010). All data, including the results of the analysis and research on the fossil collection, shall be compiled along with the fossil specimen inventory and detailed paleontological locality forms, maps, and photos for inclusion in the annual paleontological mitigation report described in item (f). f) **Annual Reporting.** The annual paleontological mitigation report shall be submitted to the County Department of Planning and Development and, if fossils are discovered, to the University of California Museum of Paleontology (or other equivalent fossil repository). The annual paleontological mitigation report shall also include dates of field work, results of spot checking, survey and sampling, fossil analyses, significance evaluation, conclusions and future recommendations, locality forms, and an itemized list of specimens. Detailed survey reports and verification of new mining personnel paleontology trainings shall be included as appendices. The PRMP shall identify an annual due date for the report.	
Impact 3.7-6: The Project would contribute to the cumulative loss of paleontological resources.	**Mitigation Measure 3.7-6:** Implement Mitigation Measure 3.7-5 (requiring worker training, surveys, spot checks, curation, and annual reporting).	Significant and Unavoidable

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Greenhouse Gas Emissions		
Impact 3.8-1: The Project would generate greenhouse gas emissions directly and indirectly, contributing to global climate change.	**Mitigation Measure 3.8-1a:** Prior to the commencement of the construction activities, the Applicant shall purchase offset credits in the amount of 7,408 metric tons CO_2e. This amount represents amortized construction emissions plus estimated first year operational emissions. The Applicant shall provide verification to the County that carbon offset credits have been purchased. The Applicant shall prioritize offsets within Santa Clara County, BAAQMD boundaries, the rest of California, and from other states with offset laws at least as strict as California's, in order of preference. The carbon offset credits shall be real, permanent, quantifiable, verifiable, additional, and enforceable, as defined by 17 CCR 95802. Offset protocols must also be consistent with CARB requirements under 17 CR 95972. Carbon offsets must meet these requirements and be purchased from offset programs verified by a recognized third-party registry such as the American Carbon Registry, Verra, or Climate Action Reserve. For each subsequent year of Project operations, the Applicant shall choose one of the following options. 1. <u>Option 1</u>: The Applicant shall continue to make the offset payment each subsequent year in the complete amount of 7,408 metric tons CO_2e. 2. <u>Option 2</u>: The Applicant shall purchase offset credits in the amount of 7,408 metric tons CO_2e minus the difference between 7,408 metric tons and the actual CO_2e emissions that the project generated in the prior year. Based on actual Project construction and/or subsequent year operational activities that resulted in GHG emissions, the Applicant shall calculate annual GHG emissions, including consideration of any measures that have been taken to reduce project GHG emissions, and provide emissions estimates to the County for review and approval. Within 60 days of County approval of the estimated emissions, the Applicant shall provide verification to the County that carbon offset credits have been purchased for the amount identified by the County-approved emissions estimates. **Mitigation Measure 3.8-1b:** For construction and operational off-road equipment, the Applicant shall replace diesel and gasoline-powered vehicles with electric or other low or zero-GHG emissions equipment as feasible, based on availability of the technology and whether the cost would be prohibitive. In addition, biodiesel or renewable diesel shall replace traditional petroleum-based diesel to fuel off-road equipment where feasible, based on availability of the technology and whether the cost would be prohibitive. Any resulting changes to the Project fleet or fuel type shall be reflected in the calculations of GHG emissions for Option #2 of Mitigation Measure 3.8-1a. Prior to the commencement of construction activities, and every five years afterward, the Applicant shall provide the County with a report for County review and approval describing the feasibility of using low carbon-emitting equipment and fuels for the Project. **Mitigation Measure 3.8-1c:** If and when electric haul trucks are used for product hauling associated with the Project, the Applicant shall install conduit and EV charging stations at locations where trucks will be parked or idling. The Applicant shall notify the County when installation of conduit and EV charging stations is completed, following which the County shall verify installation. Any resulting changes to the Project fleet shall be reflected in the calculations of GHG emissions for Options #2 in Mitigation Measure 3.8-1a. This mitigation measure will also reduce future NOx emissions from trips to the site.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Impact 3.8-2: The Project could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	**Mitigation Measure 3.8-2:** Implement Mitigation Measures 3.8-1a through 3.8-1c.	Less than Significant
Hazards and Hazardous Materials		
Impact 3.9-1: The Project would routinely transport, use, and disposal of hazardous materials, which could pose a risk to human health and/or the environment.	None required.	Less than Significant
Hazards and Hazardous Materials (cont.)		
Impact 3.9-2: The Project could create a hazard to the public or the environment through accidental release of existing soil contaminants, such as historic pesticide residues, into the environment.	**Mitigation Measure 3.9-2:** The Project Applicant shall analyze and remove suspected residual pesticides in corral on-site soils. This measure applies to construction and mining and applies only to the corral area soils identified in the Phase I Environmental Site Assessment. Specifically, the Applicant shall implement the following: a) Prior to issuance of a grading permit or any soil-disturbing activities, including placement of overburden material, within the corral area (shown on Figure 3 in Appendix H), the Project Applicant shall have soil samples collected and analyzed by a qualified environmental professional to determine if residual pesticides are present in on-site soils within the corral area. If residual pesticides are detected at levels that exceed regulatory thresholds, the geographical and vertical extent of contamination shall be identified, and recommendations for a Health and Safety Plan and methods for cleanup shall be implemented, as applicable. This work shall be performed under the oversight of the County's Site Cleanup Program (SCP) within the Department of Environmental Health (DEH) Site Mitigation Programs (County of Santa Clara 2021b) with copies of all documentation provided to the County Department of Planning and Development. b) If residual pesticides are present at the corral site, then the Applicant shall have soils containing pesticides removed from the site and characterized and disposed of according to the California Hazardous Waste Regulations. Contaminated soil that exceeds regulatory thresholds shall be handled by trained personnel using appropriate personal protective equipment (PPE) and engineering and dust controls, in accordance with local, state, and federal laws, such as those enforced by Cal/OSHA and the Bay Area Air Quality Management District (BAAQMD). Any contaminated soils that are removed from the site shall be disposed of at a licensed hazardous materials disposal site.	Less than Significant
Impact 3.9-3: The Project would contribute to the cumulative increases in the risk of exposure to hazardous materials.	**Mitigation Measure 3.9-3:** Implement Mitigation Measure 3.9-2.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Hydrology and Water Quality		
Impact 3.10-1: Project construction grading and other activities would substantially degrade surface or groundwater quality.	**Mitigation Measure 3.10-1:** Implement Mitigation Measure 3.4-4 from Section 3.4, Biological Resources.	Less than Significant
Impact 3.10-2: Project operation and subsequent reclamation of the Project site would not substantially degrade surface or groundwater quality.	None required.	Less than Significant
Impact 3.10-3: The Project would not substantially decrease groundwater supplies through affecting groundwater quality such that the Project may impede sustainable groundwater management of the basin.	None required.	Less than Significant
Impact 3.10-4: Project activities would not have an adverse impact on groundwater production in local groundwater wells.	None required.	Less than Significant
Impact 3.10-5: The Project would not substantially increase regional consumptive use of groundwater or reduce recharge, thereby decreasing availability of groundwater.	None required.	Less than Significant
Impact 3.10-6: The Project would not impede sustainable groundwater management of a groundwater basin.	None required.	Less than Significant
Impact 3.10-7: The Project would not substantially alter existing drainage patterns in a manner that would result in substantial erosion or siltation on or off site, increased runoff, or adverse impacts on water quality or related to flood flows.	None required.	Less than Significant
Impact 3.10-8: The Project would not risk release of pollutants due to Project inundation in a flood hazard zone, or due to impeding or redirecting flood flows.	None required.	Less than Significant
Impact 3.10-9: The Project would not conflict with the CCRWQCB Basin Plan or obstruct implementation of a sustainable groundwater management plan.	None required.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Impact 3.10-10: The Project would n contribute to significant cumulative degradation of water quality.	**Mitigation Measure 3.10-10:** Implement Mitigation Measure 3.4-4 from Section 3.4, *Biological Resources*, during Project construction.	Less than Significant
Impact 3.10-11: The Project would not contribute to significant cumulative increases in the consumption of groundwater supply.	None required.	Less than Significant
Mineral Resources		
Impact 3.11-1: The Project could result in the loss of a valuable mineral resources or loss of a locally important mineral resource recovery site.	None required.	Less than Significant
Impact 3.11-2: The Project could contribute to cumulative loss of availability of a known mineral resource or loss of a locally important mineral resource recovery site.	None required.	Less than Significant
Noise and Acoustics		
Impact 3.12-1: Project construction would result in temporary increases in ambient noise levels in the Project vicinity.	None required.	Less than Significant
Impact 3.12-2: Project operations would permanently increase ambient noise levels in the vicinity of the Project.	None required.	Less than Significant
Impact 3.12-3: Use of conventional earth moving equipment during construction, operation, and reclamation could generate groundborne vibration and groundborne noise levels.	None required.	Less than Significant
Impact 3.12-4: The Project would not result in a cumulatively considerable contribution to a significant noise or vibration impact.	None required.	Less than Significant
Transportation		
Impact 3.13-1: The Project would not conflict with County of Santa Clara policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	None required.	Less than Significant
Impact 3.13-2: The Project would generate substantial additional VMT.	No mitigation available.	Significant and Unavoidable

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Impact 3.13-3: Project construction could increase roadway hazards due to the presence of large construction trucks, temporary lane closures and detours.	**Mitigation Measure 3.13-3:** Construction Traffic Control Plan The Applicant shall require the construction contractor to prepare and submit a Construction Traffic Control Plan to the County of Santa Clara Department of Public Works and Caltrans District 4 for approval prior to the onset of construction. The Construction Traffic Control Plan shall be prepared in accordance with the California Department of Transportation Transportation Management Plan Guidelines (2015) and shall include, at a minimum, the following: a. Restricting or limiting heavy vehicle traffic to and from the Project site to occur outside the peak commute hours (7:00-9:00 a.m. and 4:00-6:00 p.m.); b. Timing of deliveries of heavy equipment and building materials to occur outside the peak commute hours; c. Directing construction traffic with a flag person; d. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic; e. Ensuring access for emergency vehicles to the Project site; f. Temporarily closing travel lanes or delaying traffic during materials delivery or the construction of roadway improvements; g. Storing construction equipment on-site during construction; h. Identifying and using truck routes acceptable to Caltrans and the County for construction-related heavy trucks; i. Maintaining access to any adjacent properties; and, j. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the a.m. and p.m. peak hours.	Less than Significant
Impact 3.13-4: The Project could result in inadequate emergency access.	**Mitigation Measure 3.13-4:** Implement Mitigation Measure 3.13-3, Construction Traffic Control Plan.	Less than Significant
Impact 3.13-5: The Project would contribute to cumulative increases in vehicle miles traveled.	No mitigation available.	Significant and Unavoidable
Impact 3.13-6: The Project would contribute to significant cumulative increases in roadway hazards and/or interference with emergency access.	**Mitigation Measure 3.13-6:** Implement Mitigation Measure 3.13-3, Construction Traffic Control Plan.	Less than significant
Utilities and Service Systems		
Impact 3.14-1: The Project would increase demand for water supply.	None required.	Less than Significant

TABLE S-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
Impact 3.14-2: The Project would generate additional solid waste.	None required.	Less than Significant
Impact 3.14-3: Project construction and operation would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	None required.	Less than Significant
Impact 3.14-4: The project would contribute to cumulative increases in demand for water supply.	None required.	Less than Significant
Impact 3.14-5: The project would contribute to cumulative increases in generation of solid waste.	None required.	Less than Significant
Wildfire		
Impact 3.15-1: The Project could exacerbate wildfire risks and could thereby expose people to pollutant concentrations from a wildfire or expose people or structures to risk of loss, injury, or death involving wildland fires.	None required.	Less than Significant
Impact 3.15-2: The Project could expose people or structures to risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	None required.	Less than Significant
Impact 3.15-3: The Project could result in a cumulatively considerable contribution to a significant cumulative impact related to wildfire.	None required.	Less than Significant

TABLE S-2
COMPARISON OF ALTERNATIVES TO THE PROJECT (SIGNIFICANT IMPACTS)

Environmental Impact	Project	Alternative 1	Alternative 2	Alternative 3
Aesthetics				
Impact 3.2-1: The Project would alter the visual character of the Project site or scenic resource visible from U.S. 101, a County-designated scenic highway.	SU/M	NI	SU/M>	SU/M<
Impact 3.2-3: The Project would contribute to cumulative changes in visual character of public views from U.S. 101, a County-designated scenic highway.	SU/M	NI	SU/M>	SU/M<
Air Quality				
Impact 3.3-1: The Project would affect implementation of the applicable air quality plans.	SU/M	NI	SU/M<	SU/M<
Impact 3.3-2: The Project would emit criteria air pollutants–ozone precursors (NOx and ROG), PM2.5, and PM10, for which the region is in nonattainment status.	SU/M	NI	SU/M<	SU/M<
Impact 3.3-5: The Project would contribute nonattainment pollutants (ozone precursors, PM2.5 and PM10) to cumulative increases in air pollutants.	SU/M	NI	SU/M<	SU/M<
Biological Resources				
Impact 3.4-1: Project activities would result in adverse effects on special-status plant species.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-3: Project activities would result in adverse effects on special-status fish and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-4: Project activities would result in adverse effects on California red-legged frogs and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-5: Project activities would result in adverse effects on California tiger salamanders (CTS) and their habitat.	LTS/M	NI	LTS/M>	LTS/M>
Impact 3.4-6: Project activities would result in adverse effects on western pond turtles and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-7: Project activities would result in adverse effects on burrowing owls and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-8: Project activities would result in adverse effects on tricolored blackbirds and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-9: Project activities would result in adverse effects on other special-status and protected birds and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-10: Project activities would result in adverse effects on special-status bats.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-11: Project activities would result in adverse effects on mountain lions and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-12: Project activities would result in adverse effects on San Francisco dusky-footed woodrats and their habitat.	LTS/M	NI	LTS/M=	LTS/M=
Impact 3.4-13: Project activities would result in adverse effects on American badgers and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-14: Project activities would result in substantial adverse effects on jurisdictional wetlands, other waters, and riparian habitats.	LTS/M	NI	LTS/M=	LTS/M=
Impact 3.4-15: Implementation of the project would interfere substantially with wildlife movement.	SU/M	NI	SU/M<	SU/M<
Impact 3.4-16 Project activities would conflict with County ordinances and policies intended to protect biological resources.	LTS/M	NI	LTS/M=	LTS/M=

TABLE S-2 (CONTINUED)
COMPARISON OF ALTERNATIVES TO THE PROJECT (SIGNIFICANT IMPACTS)

Environmental Impact	Project	Alternative 1	Alternative 2	Alternative 3
Biological Resources (cont.)				
Impact 3.4-17: The Project activities could contribute to the cumulative loss of special-status plant species.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-19: Project activities could contribute to a cumulative degradation of habitat for special-status fish.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-20: Project activities could contribute to cumulative harm to protected terrestrial species and loss of their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-21: The Project activities could contribute to the cumulative loss of jurisdictional wetlands, other waters, and riparian habitats.	LTS/M	NI	LTS/M=	LTS/M=
Impact 3.4-22: The Project activities could contribute to the cumulative impairment of wildlife crossings.	SU/M	NI	SU/M<	SU/M<
Impact 3.4-23: The Project activities could contribute to the cumulative loss of oaks and oak woodlands.	LTS/MM	NI	LTS/M=	LTS/M=
Cultural and Tribal Resources				
Impact 3.5-1: The Project would cause a substantial adverse change in the significance of known historical or archaeological resources.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-2: Implementation of the Project could damage unrecorded subsurface prehistoric and historic archaeological resources.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-3: The Project could disturb any human remains, including those interred outside of dedicated cemeteries.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-4: The Project would cause a substantial adverse change in the significance of tribal cultural resources within the proposed area of development.	SU/M	NI	LTS/M<	LTS/M<
Impact 3.5-5: The Project would cause a substantial adverse change in the significance of the Juristac Tribal Cultural Landscape	SU/M	NI	SU/M<	SU/M<
Impact 3.5-6: The Project could contribute to cumulative adverse changes in known historical or archaeological resources.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-7: The Project could contribute to cumulative adverse changes in unrecorded subsurface prehistoric and historic archaeological resources.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-8: The Project could contribute to cumulative disturbance of human remains, including those interred outside of dedicated cemeteries	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-9: The Project could contribute to cumulative adverse changes in the significance of tribal cultural resources.	SU/M	NI	SU/M<	SU/M<
Geology, Soils, and Paleontological Resources				
Impact 3.7-2: Excavation of quarry pits and reclamation would increase the potential for slope instability and slope failure.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.7-5: Project excavation and grading would adversely affect paleontological resources.	SU/M	NI	SU/M<	SU/M<
Impact 3.7-6: The Project would contribute to the cumulative loss of paleontological resources.	SU/M	NI	SU/M<	SU/M<
Greenhouse Gas Emissions				
Impact 3.8-1: The Project would create greenhouse gas emissions directly or indirectly contributing to global climate change.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.8-2: The Project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.	LTS/M	NI	LTS/M<	LTS/M<

TABLE S-2 (CONTINUED)
COMPARISON OF ALTERNATIVES TO THE PROJECT (SIGNIFICANT IMPACTS)

Environmental Impact	Project	Alternative 1	Alternative 2	Alternative 3
Hazards and Hazardous Materials				
Impact 3.9-2: The Project could create a hazard to the public or the environment through accidental release of existing soil contaminants, such as historic pesticide residues, into the environment.	LTS/M	NI	LTS/M=	LTS/M=
Impact 3.9-3: The Project would contribute to the cumulative increases in the risk of exposure to hazardous materials.	LTS/M	NI	LTS/M=	LTS/M=
Hydrology and Water Quality				
Impact 3.10-1: Project construction grading and other activities would substantially degrade surface or groundwater quality.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.10-10: The Project would not contribute to cumulative degradation of water quality.	LTS/M	NI	LTS/M <	LTS/M <
Transportation				
Impact 3.13-2 The Project would generate additional substantial vehicle miles traveled.	SU/M	NI	SU/M<	SU/M<
Impact 3.13-3: Project construction could increase roadway hazards due to the presence of large construction trucks, temporary lane closures and detours.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.13-4: The Project could result in inadequate emergency access.	LTS/M	NI	LTS<	LTS/M<
Impact 3.13-5: The Project would contribute to cumulative increases in vehicle miles traveled.	SU/M	NI	SU/M<	SU/M<
Impact 3.13-6: The Project would contribute to significant cumulative increases in roadway hazards and/or interference with emergency access.	LTS/M	NI	LTS/M<	LTS/M<

NOTES:

LTS/MM=Less than Significant with Mitigation
NI=No Impact
SU=Significant and Unavoidable
SU/M=Significant and Unavoidable with Mitigation

= Impact would be the same or similar to the Project impact
> Impact would be more severe than the Project impact
< Impact would be less severe than the Project impact

CHAPTER 1
Introduction

1.1 Purpose of This Document

The County of Santa Clara (County), as the Lead Agency, has prepared this Draft Environmental Impact Report (EIR) for the Sargent Ranch Quarry Project (Project) in compliance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.), and its implementing regulations, the CEQA Guidelines. (14 California Code of Regulations, Section 15000 et seq.)

As described in CEQA Guidelines Section 15121(a), an EIR is an informational document that assesses significant environmental impacts of a proposed project, and it identifies mitigation measures and alternatives to the proposed project that could reduce or avoid adverse environmental impacts. As the CEQA Lead Agency for this Project, the County will consider the information in the EIR along with other information available in the record for the Project in deciding whether to approve the Project. Consistent with CEQA, this EIR includes discussions of the environmental setting, environmental impacts, mitigation measures, cumulative impacts, alternatives, and growth-inducing impacts.

1.2 Project Overview

Sargent Ranch Partners, LLC (Applicant) proposes to construct, operate for 30 years, and subsequently reclaim the Sargent Ranch Quarry Project on an approximately 403-acre site in Santa Clara County (Project site). The Project is a sand and gravel mining operation that includes an aggregate processing facility. The Project site is located within the Sargent Ranch property, which is approximately 4 miles south of the city of Gilroy and approximately 1 mile south of the U.S. 101 and Highway 25 interchange.

The County Zoning Code requires the issuance of a Use Permit and Architecture and Site Approval for mining projects, along with approval of a site-specific Reclamation Plan and financial assurances (Section 4.10.370 – Surface Mining, subsections (E), (F) and (K)). Mining activities and implementation of the Reclamation Plan for the Project would be required to satisfy requirements of both the State Surface Mining and Reclamation Act (SMARA) (Public Resources Code Section 2710 et seq.; 14 Cal. Code Regs. Section 3500 et seq.) and the County's Surface Mining requirements (County Zoning Code Section 4.10.370).

1.3 Use of This Document by Agencies

The County is the CEQA Lead Agency and has discretionary authority over the land use entitlements necessary to implement the Project under the County Code and SMARA. Other state and local agencies with discretionary approval authority over the Project (Responsible Agencies) or a trustee for certain specific resources (Trustee Agencies) are described in Chapter 2, *Project Description*. For example, the California Department of Fish and Wildlife (CDFW) is both a Trustee Agency and a Responsible Agency that would use the EIR in its decision-making processes for any permits that the Project requires from CDFW.

Responsible agencies for this EIR in addition to CDFW include Caltrans, the Central Coast Regional Water Quality Control Board, the Bay Area Air Quality Management District, and Santa Clara Valley Water District (see Table 2-7).

1.4 EIR Process

1.4.1 Scoping

In accordance with Section 15082 of the CEQA Guidelines, the County prepared a Notice of Preparation (NOP) for this EIR and circulated it to local, state, and federal agencies on July 21, 2016. The 30-day period for agencies and others to provide input as to the scope and contents of this EIR concluded on August 20, 2016. The NOP provided a general description of the Project and identified possible environmental impacts that could result from implementation of the Project. The County also held a public scoping meeting on August 10, 2016, to discuss the Project and solicit input. The meeting was held at 350 West 6th Street in Gilroy, California. Appendix A of this EIR includes the NOP and comments received on the NOP. The County considered input received during the scoping period, evaluated Project-specific and site-specific technical studies, conducted independent research, and has documented its environmental analysis in this Draft EIR.

1.4.2 Public Comment on the Draft EIR

Publication of this Draft EIR will mark the beginning of a 60-day public review and comment period. During this period, the Draft EIR will be available for review by local, state, and federal agencies; tribes; and interested organizations and individuals for review (CEQA Guidelines Section 15086).

1.4.3 Final EIR

Following the conclusion of the public review and comment period, the County will prepare a Final EIR in conformance with CEQA. The Final EIR will consist of:

a) The Draft EIR or a revision of the draft

b) Comments and recommendations received on the Draft EIR either verbatim or in summary

c) A list of persons, organizations, and public agencies commenting on the Draft EIR

d) The responses of the County to significant environmental points raised in the review and consultation process, prepared in accordance with CEQA Guidelines Section 15088

e) Any other information added by the County

1.4.4 EIR Certification, Findings, and Project Approval

Following preparation of the Final EIR, the County Planning Commission will consider whether to: certify the EIR, adopt CEQA finding of fact, adopt a statement of overriding considerations for any significant unavoidable impacts, and approve the Project. Any action of the Planning Commission would be appealable to the County Board of Supervisors.

1.5 Organization of this EIR

Consistent with CEQA Guidelines Sections 15120 through 15131, this Draft EIR includes a:

- **Table of contents**
- **Summary**: Summary that identifies each significant impact along with the proposed mitigation measures and/or alternatives that would reduce or avoid each impact, discusses areas of controversy known to the County, and identifies the issues to be resolved.
- **Chapter 1**: Introduction to the purpose of this document, a brief Project overview, the use of this document by agencies, and the EIR process.
- **Chapter 2**: Project description, including the regional and precise location and boundaries of the Project on maps; provides a statement of Project objectives, including the underlying Project purpose; provides a general description of Project characteristics; and includes a brief statement of the intended uses of the EIR to the extent known to the County, including a list of other agencies that are expected to use the EIR in decision making, a list of permits and approvals required to implement the Project, and a list of related environmental review and consultation requirements mandated by laws, regulations, or policies.
- **Chapter 3**: Environmental setting, impacts, and mitigation measures. Includes analysis of direct, indirect, and cumulative effects of the Project and mitigation measures to avoid or minimize significant impacts.
- **Chapter 4**: Discussion of alternatives that evaluates, analyzes, and compares a reasonable range of feasible alternatives that would attain most of the basic Project objectives and would avoid or reduce any of the significant impacts of the Project; evaluates and analyzes a "no project" alternative that describes impacts that are reasonably expected to occur in the foreseeable future if the Project is not approved; identifies the Environmentally Superior Alternative; and identifies potential alternatives that initially were considered by the County and briefly explains why they were not carried forward for more detailed review.
- **Chapter 5**: Discussion of other CEQA considerations, consisting of discussions of growth-inducing impacts, irreversible environmental changes, and a summary of significant and unavoidable impacts.
- **Chapter 6**: A list of organizations and persons preparing the EIR.
- **Appendices**, including scoping materials, the Applicant's Mining and Reclamation Plan, and technical reports supporting the analyses in this EIR.

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CHAPTER 2
Project Description

2.1 Introduction

Sargent Ranch Partners, LLC (Applicant) proposes to develop a sand and gravel surface mining operation called the Sargent Ranch Quarry Project (Project) on an approximately 403-acre site located in Santa Clara County (Project site). The Project consists of the development of a sand and gravel mining operation on approximately 298 acres within the Sargent Ranch property, which currently is used for cattle ranching. An aggregate processing facility is proposed on the east frontage of the site, and a surface mining operation to the west and south. The mined material (sand and gravel, collectively called "product") would be transported off-site by a combination of truck and train hauling. The remaining 105 acres of the 403-acre Project site would be designated as a "geotechnical setback area" that would buffer excavation areas from surrounding uses and that could be used if needed to allow more slope layback[1] to increase slope stability or provide a buffer area in the case of unforeseen slope failure. Mining operations would be conducted for 30 years, in four phases as described below. Over the 30-year period, portions of the site would be reclaimed upon completion of each phase of the quarry operation. At the end of the Project's life, final reclamation of the last surface mining phase would occur, and the aggregate processing facility site would also be reclaimed.

The Santa Clara County Zoning Code requires the issuance of a Use Permit for surface mining projects and approval of a site-specific Reclamation Plan and Financial Assurance Cost Estimate (Section 4.10.370 – Surface Mining, subsections (E), (F), and (K)) in accordance with the State of California Surface Mining and Reclamation Act (SMARA) (Public Resources Code Section 2710 et seq.; 14 Cal. Code Regs. Section 3500 et seq.). SMARA was enacted to help mitigate environmental impacts from mining by ensuring that mined lands are reclaimed to a usable condition.

Surface mining activities and implementation of the Reclamation Plan for the Project would be needed to satisfy requirements of both SMARA and the County of Santa Clara's (County's) Surface Mining requirements (County Zoning Code Section 4.10.370). The surface mining operation would process sand and gravel Monday through Saturday from 6:00 a.m. to 5:00 p.m., and sales (including transport off-site) would occur from 4:30 a.m. to 4:00 p.m. Because these proposed hours of operation would extend beyond the standards for Surface Mining operation allowed by the County Zoning Ordinance (4.10.370 Part II, A (1)), Planning Commission approval of a

1 "Slope layback" is a term for grading the final slope at a less steep angle. For example, a 4:1 (horizontal to vertical) slope rather than a 3:1 slope.

deviation from the standard hours of operation would be required. The following terms are used throughout this Environmental Impact Report (EIR) and defined here for clarification:

> **Product** consists of sand and gravel. These are the economically valuable mineral resources suitable for use as concrete grade aggregate that would be graded by size at the processing plant and sold to customers. Construction aggregate is a broad category of coarse- to medium-grained particulate material used in construction, including sand, gravel, or crushed stone. Aggregates are a major component of construction materials such as concrete and asphalt. Fine aggregate is generally smaller than 0.25 inches in size and consists usually of sand. Coarse aggregates range from 0.25 inches to 1 inch in size and usually consist of crushed rock or gravel.
>
> **Topsoil** is the top approximately 2 feet of soils on the site and does not contain saleable product. It would be removed in order to access sand and gravel product and stockpiled for reuse during reclamation.
>
> **Overburden** is the material (e.g., soil and rock) that lies above the product. It does not include topsoil. Overburden would be removed to access product and stockpiled for reuse in constructing the screening berm, backfilling mining pits during reclamation, and some potential sales.
>
> **Total excavation** refers to all materials removed from the ground as part of the surface mining process, including product, topsoil, and overburden.

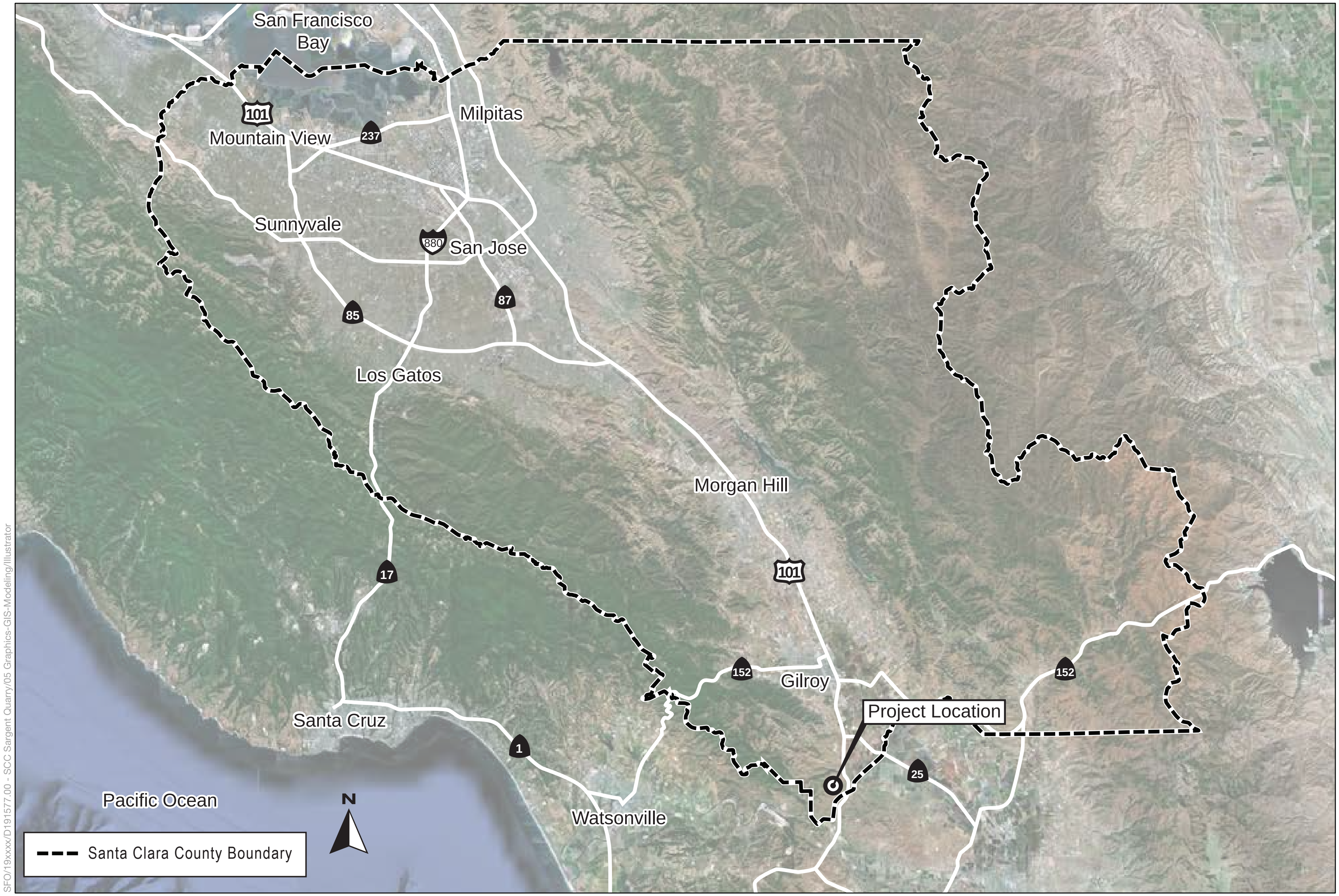
2.2 Project Location

The Project site is located within the approximately 5,154-acre Sargent Ranch property in Santa Clara County. The Project site is located within the foothills of the Coast Range Mountains approximately four miles south of the city of Gilroy and approximately one mile south of the U.S. 101 and Highway 25 interchange, as shown in **Figure 2-1**, *Regional Map*. The Project site is accessed from U.S. 101 via Old Monterey Road.

As shown in **Figure 2-2**, *Project Site and Vicinity*, the Project site and surrounding areas are largely undeveloped. Several creeks cross the Project site, including Sargent Creek and Tar Creek. Project site elevations range from approximately 130 feet above mean sea level (msl) to 800 feet above msl. Assessor's Parcel Numbers for the Project site are 810-38-014, -016, and 017 (see **Figure 2-3**, *Parcel Map*).

2.2.1 Existing and Past Uses of the Project Site

The Project site occupies approximately 403 acres within the Sargent Ranch. The Project site itself is void of structures but contains fencing and a dirt roadway network that accesses areas of the ranch. The Project site is used for cattle grazing and some cultivation of dry-farmed oat hay for cattle feed.



SOURCE: Triad/Holmes Associates, September 17, 2020

SCC Sargent Quarry

Figure 2-1
Regional Map

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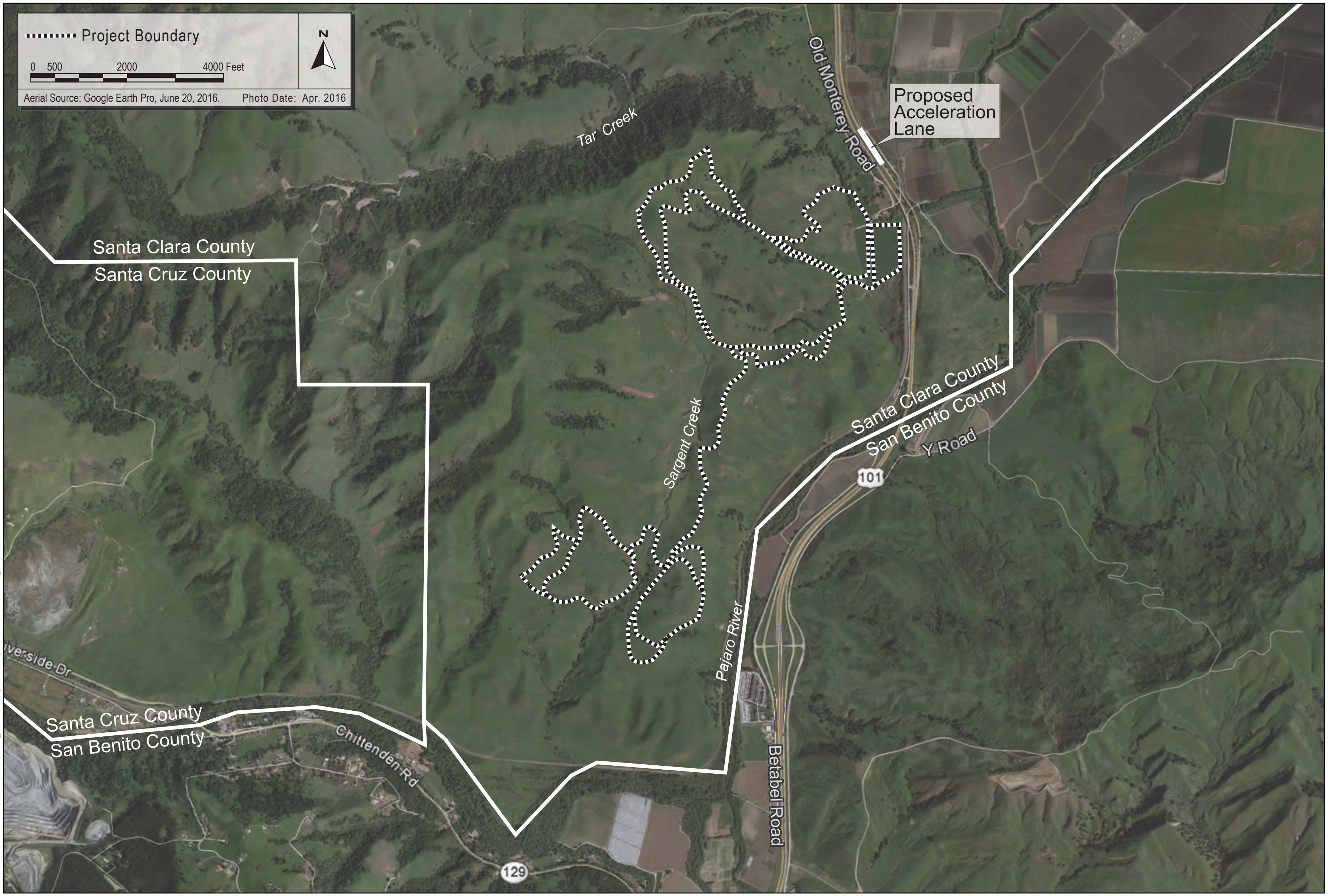

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SOURCE: Triad/Holmes Associates, 2021

SCC Sargent Quarry

Figure 2-2
Project Site and Vicinity

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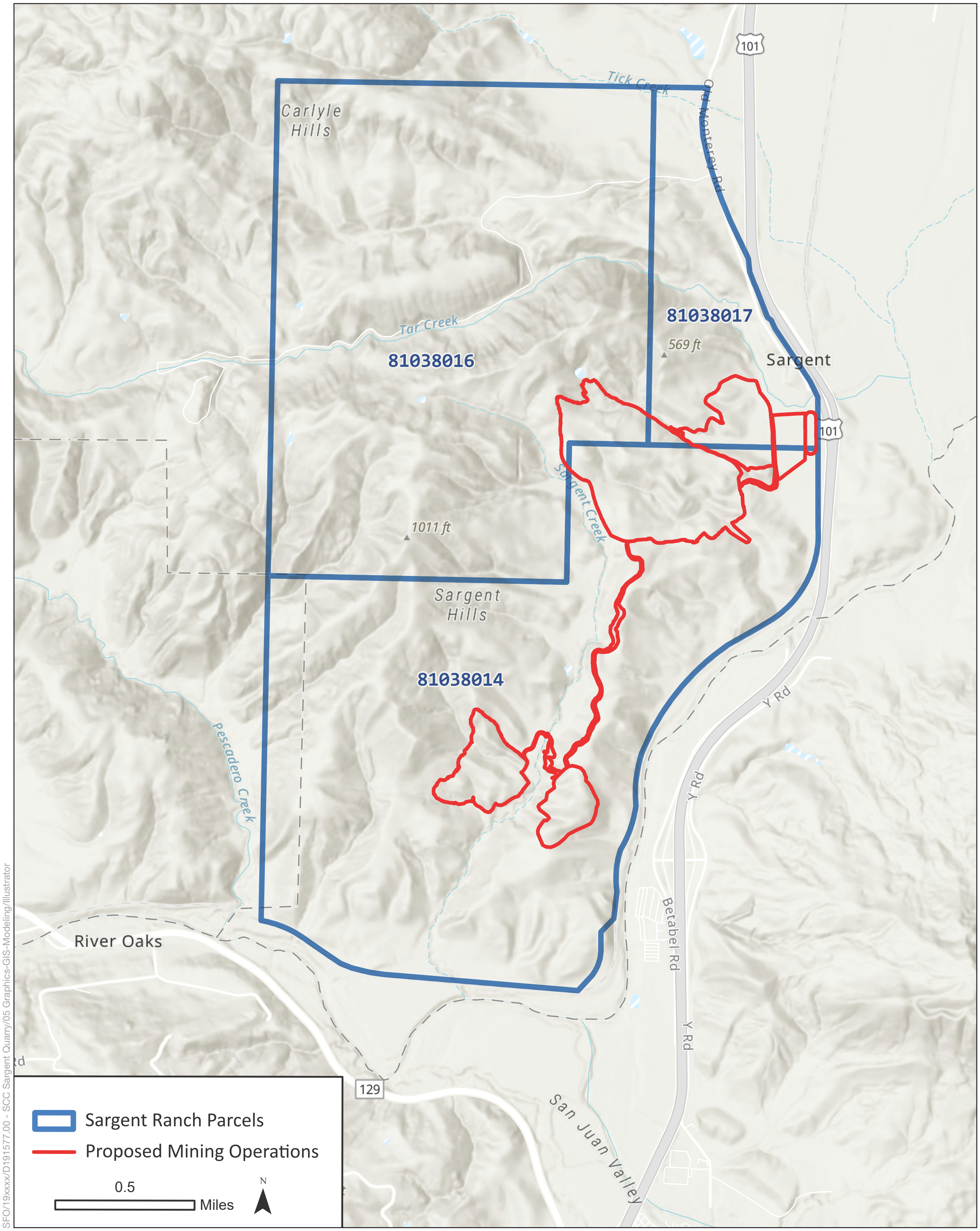


SOURCE: County of Santa Clara, 2021

SCC Sargent Quarry

Figure 2-3
Parcel Map

2.2.2 Uses Surrounding the Project Site

The area immediately surrounding the Project site to the north, west, and south is part of the 5,154-acre Sargent Ranch. North of the Project site, there are several buildings that support the Sargent Ranch cattle operation, including a barn, storage building, and the ranch manager's residence. These buildings are located off Old Monterey Road adjacent to U.S. 101 and north of Tar Creek. The residence, which is located approximately 250 feet from the Project site, is occupied by the ranch manager at present, but would be vacated when the Project is implemented. A portion of Sargent Ranch (to the north and west of the Project site) is engaged in oil production, and there are small pipelines and oil storage facilities on the property northwest of the Project site. Additionally, several dirt roads from Old Monterey Road provide access into the larger property.

The lands surrounding Sargent Ranch are located in Santa Clara, Santa Cruz, and San Benito counties and also are primarily used for agriculture and grazing, with some open space to the west of the property. The off-site residences nearest to the Project site are located at the Betabel RV Resort, approximately 1,600 feet southeast of the eastern edge of the Phase 2 mining area. The former Freeman Quarry (a reclaimed aggregate quarry) is located approximately two miles to the north. Mining at Freeman Quarry ceased in 2019, and the mining and processing areas of the quarry have been reclaimed. The reclaimed Freeman Quarry site is currently used for cattle grazing and open space.

2.2.3 General Plan Designations and Zoning

The Project site is designated as Ranchland on the Land Use Plan map in the Santa Clara County General Plan (2016). Mineral extraction is an allowable use under the Ranchlands General Plan designation (General Plan Policy R-LU 39; Santa Clara County 1994). The Project site is zoned AR-d1 and AR-d1-sr. The AR zone refers to Agricultural Ranchlands, where surface mining is a permitted use subject to obtaining a Use Permit and Architecture and Site Approval (ASA) (Zoning Code Section 2.20.010 (B); Santa Clara County 2018). The -d1 designation indicates that the area is within the Santa Clara Valley Viewshed Design Review Combining District and the -sr designation indicates the area within the Scenic Roads Combining District. The Project therefore is subject to design review (Sections 3.20.030, 3.30.020).

2.3 Project Objectives

The fundamental underlying purpose of the Project is to develop a feasible source of aggregate in close proximity to the Bay Area to meet regional demand for construction sand. The Project objectives are as follows:

1. Develop a long-term source of high-quality aggregate needed for various uses in the County and other local markets, in furtherance of General Plan Policy R-RC 68.
2. Ensure that mining occurs in an environmentally responsible and sensitive manner that is consistent with the California Surface Mining and Reclamation Act and County requirements.

3. Locate the source of aggregate in proximity to one or more major transportation corridors and in proximity to local construction contractors and others in need of such materials, who otherwise might have to seek and transport such materials from more distant sources.
4. In furtherance of General Plan Policy R-RC 78, provide an alternative to truck transport of construction aggregates by using the Union Pacific Railroad rail spur adjacent to Sargent Ranch to replace haul trucks to the extent feasible.
5. Develop the aggregate resource in a manner that is economically feasible.
6. Minimize impacts on sensitive natural and cultural resources on the Project site.
7. Minimize aesthetic impacts through site design, phasing, and concurrent reclamation.
8. Implement a reclamation plan that provides for long-term slope stability, prevents wind and water erosion, and establishes self-sustaining native and naturalized vegetation cover.

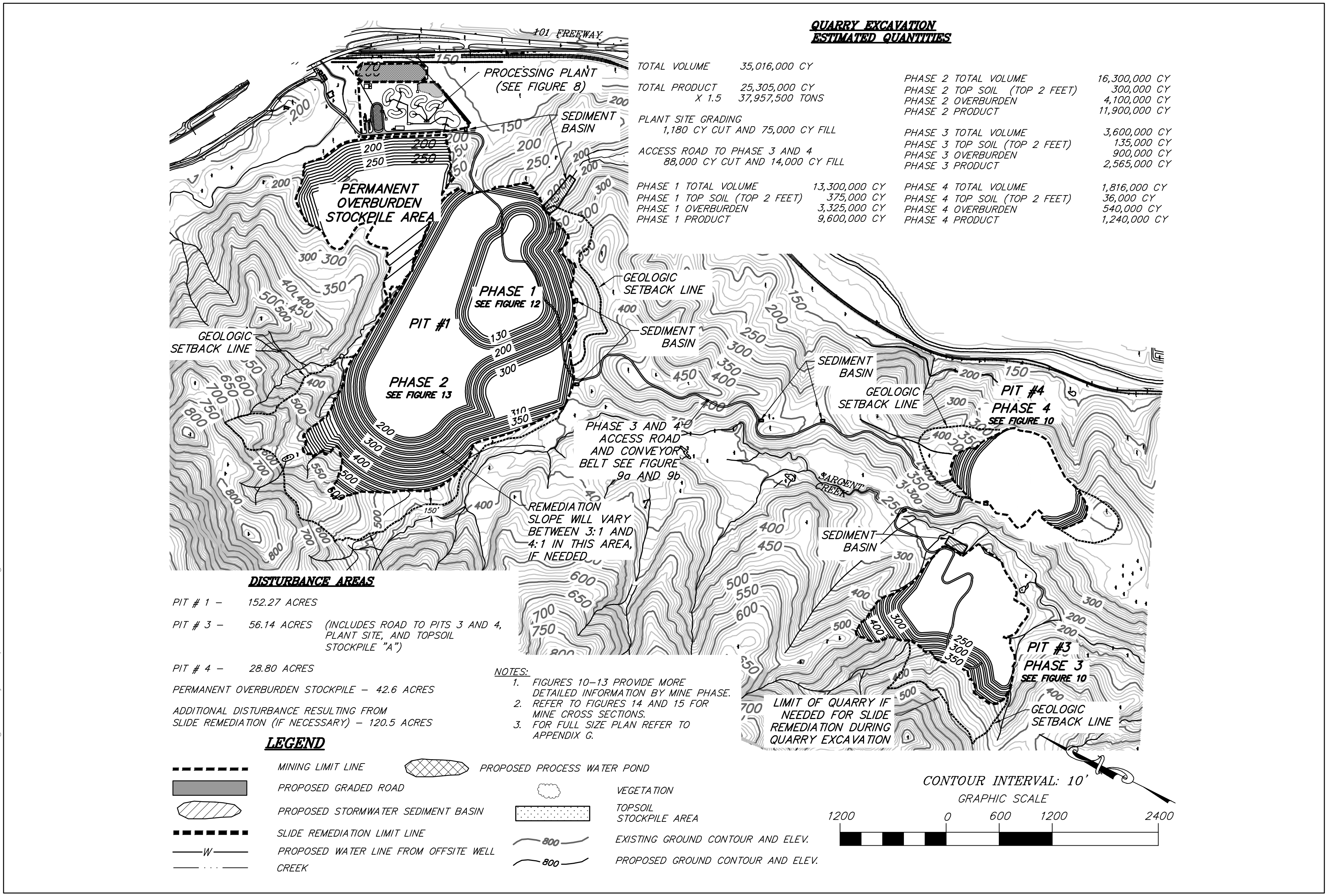
2.4 Project Components

Information in this section is based on the Applicant's Mining and Reclamation Plan (Draft EIR Appendix B). The Project would be implemented through: (1) initial site construction activities, during which the proposed facilities and needed infrastructure would be constructed; (2) quarry operation and maintenance, which comprise the major work of the Project; and (3) reclamation, during which mined lands would be reclaimed for the identified end use. Initial site construction activities would occur over nine months; they are described in Section 2.5. The duration of the requested Use Permit is 30 years; mining activities and quarry operation activities are described in Section 2.6. Reclamation of mined lands would occur at the end of each phase of mining, and would be completed five years after all mining activities cease. Reclamation-related activities are described in Section 2.6. This Section 2.4 describes components common among these three periods.

The Project must comply with Section 4.10.370 of the Santa Clara County Zoning Ordinance, which establishes standards and requirements for surface mining operation within the County. The Zoning Ordinance identifies standards for layout and design as well as operation, including hours of operation, appearance, noise and vibration, traffic safety, dust control, setbacks, fencing and postings, screening, and protection of streams and water-bearing aquifers, which are reviewed through the permitting process. The Applicant has designed the Project to be consistent with these requirements, except with respect to the proposed hours of operation. The requested extension of the hours of operation would require approval by the Planning Commission (see Section 2.7, *Approvals, Permits, and Consultation*).

2.4.1 Overview

Open-pit mining would occur in four areas (Phases 1 through 4) within the Project site (see **Figure 2-4**, *Mining Site Plan*). An overview of Project components and the mining process is provided below, followed by additional detail for specific components.



SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-4
Mining Site Plan

ESA

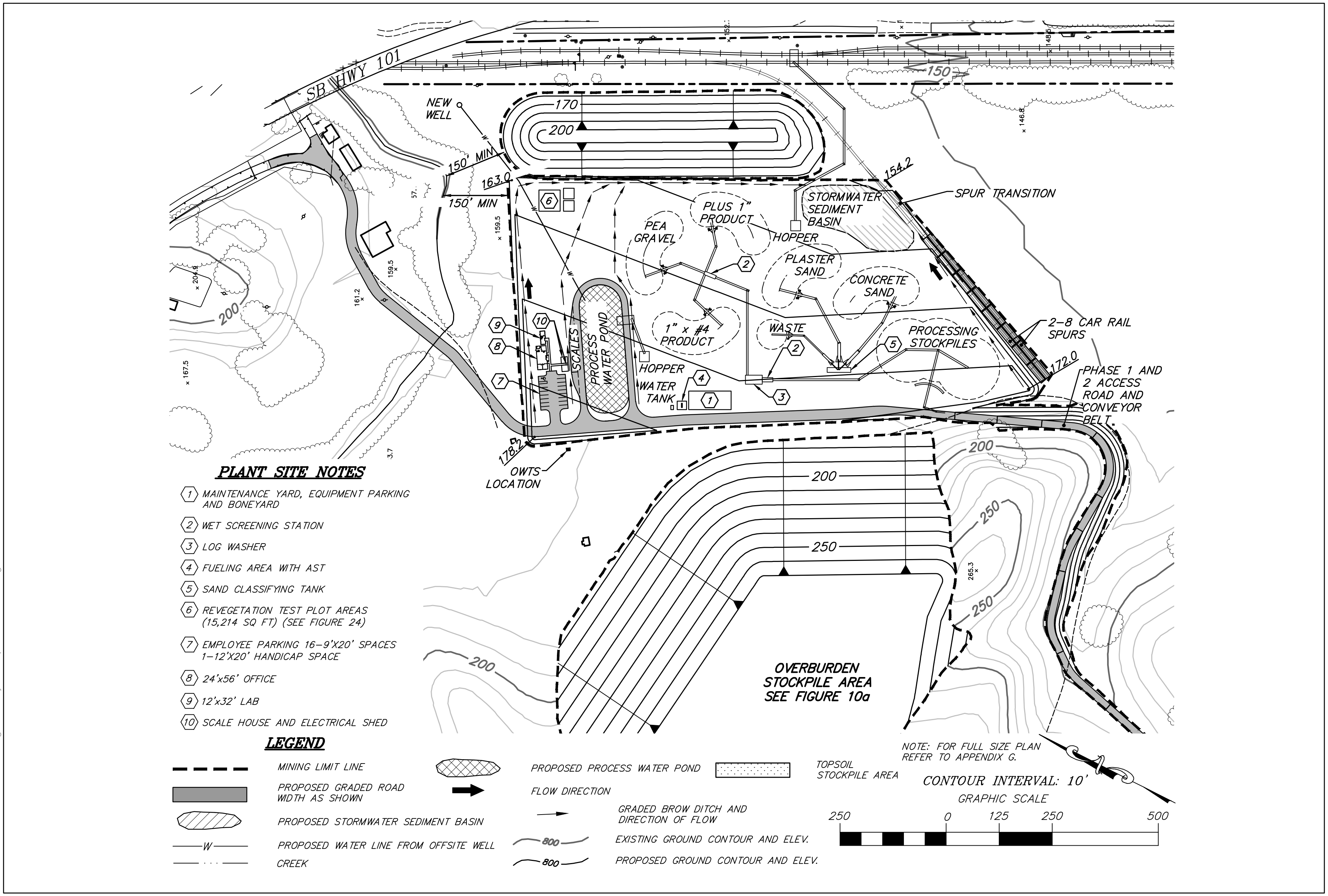
Construction of the structures, conveyor belt and roads to access Phases 1 and 2, acceleration lane improvements, and related facilities would occur over nine months (157 construction days) prior to the start of surface mining activities. All of the facilities within the processing area, including the aggregate processing plant, office/scale house, process water pond, and stormwater basins, would be constructed during this period (see **Figure 2-5a**, *Aggregate Plant Site Plan*). Initially, a temporary processing plant would be constructed (see **Figure 2-5b**, *Temporary Processing Plant).* Additional improvements would include the access/maintenance roads, a free-span bridge over Tar Creek, and a new groundwater well. After completion of Phase 2 mining, a conveyor belt connecting Phases 3 and 4 to the processing area and a parallel maintenance road, including a crossing at Sargent Creek, would be constructed. These facilities are described in more detail below. Construction activities are described in more detail in Section 2.5.

After the Project facilities are in place, mining would commence at the Phase 1 quarry. At the commencement of mining within each phase, the topsoil and overburden would be removed and stored separately in the processing area. Temporary stockpiles would be located within the individual quarry areas. A permanent overburden stockpile area would be placed between the processing plant and Phase 1 and Phase 2 mining areas as shown in Figure 2-4. This area would receive materials during Phases 1, 2, and 3.

In general, excavation to remove topsoil and overburden would be conducted during the dry season (April 16 through October 14). If excavation occurs in the wet season, appropriate best management practices (BMPs) would be used to control erosion. See Sections 2.4.4 and 2.4.5 for details.

Hill slopes within the designated quarry pits would be cut back to expose sand and gravel deposits. This product would be excavated and transported from the quarry pits to the processing plant via conveyor belt. In general, an open pit would be developed with 2:1 (i.e., 2 feet horizontal for every vertical foot) or flatter side walls with 10-foot-wide benches every 40 vertical feet. Each bench would have a longitudinal grade of four to 12 percent. All materials would be processed at the aggregate plant on-site. After processing, finished products would be sold and transported off-site via truck or rail. As slopes within each quarry pit are finished, they would be reclaimed while mining would continue on other slopes within the pit. Each phase would be fully reclaimed upon completion of mining activities within that phase (see reclamation description in Section 2.6). The final reclaimed fill slopes would have varying gradients of 3:1 or flatter.

Approximately 35 million cubic yards (cy) of material would be excavated over the 30-year life of the Project. Of this, it is estimated that a total volume of approximately 25.3 million cy would be saleable sand and gravel aggregate (product). This would equate to a total weight of approximately 38 million tons of product (assuming 1.5 tons per cy). Product consisting of mined sand and gravel aggregate would be sold to the local market for a variety of construction-related uses. Overburden and/or mined material that is not salable as concrete-grade aggregate would be stockpiled on-site. Up to 20 percent of overburden could be sold as engineered fill for construction projects throughout the life of the Project; the portion not sold would be used in the final reclamation of quarry slopes at the conclusion of each mining phase, as described further below.



SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-5a
Aggregate Plant Site Plan

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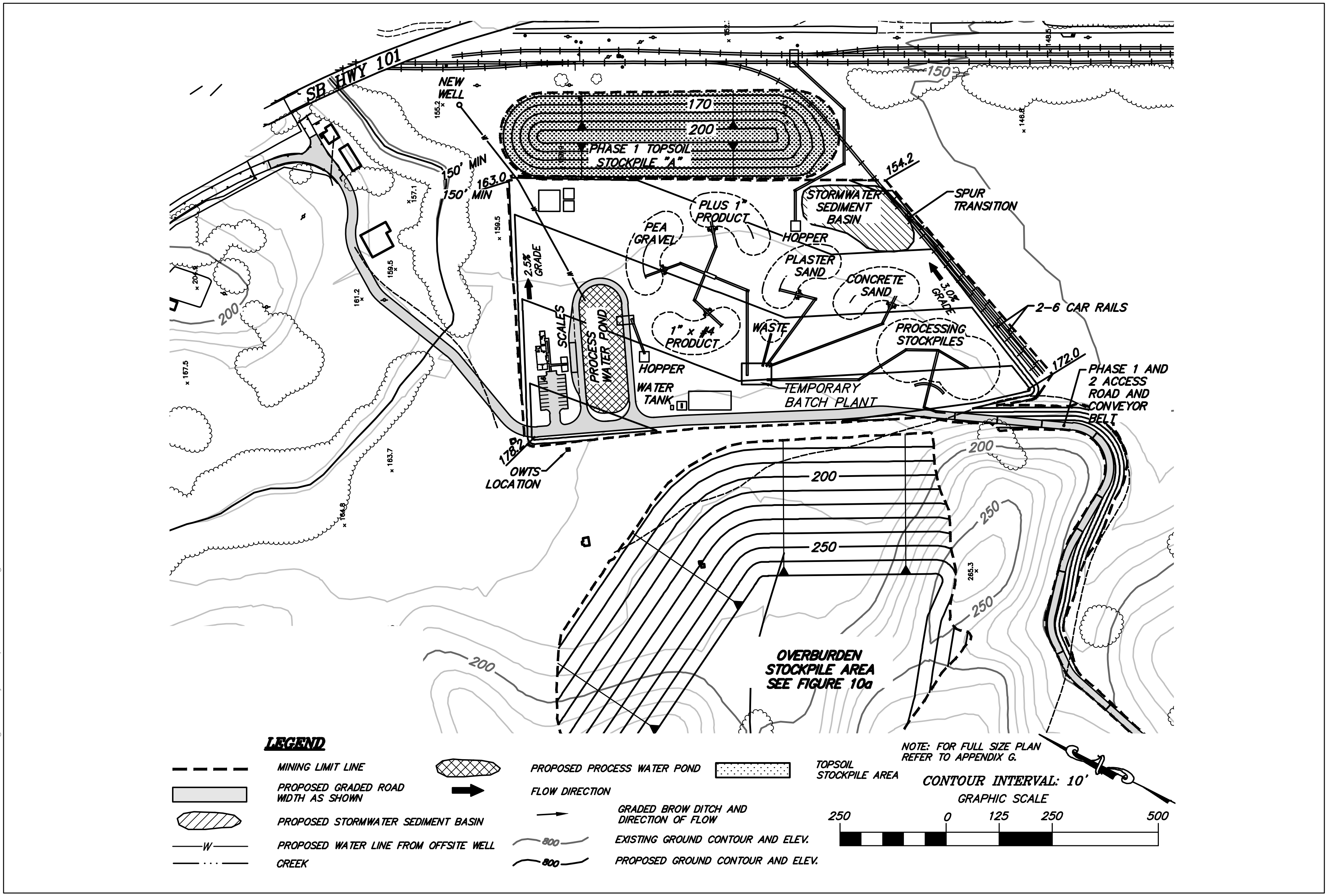

SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-5b
Temporary Batch Plant Location

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ESA

"Geotechnical setback" areas have been identified surrounding each mining area. These setback areas would be used as a buffer area if needed to allow more slope layback to increase slope stability and/or allow a buffer area in the case of slope failure.

An earthen berm would be constructed between U.S. 101 and the processing plant to screen views of the facilities from the highway. The berm would be approximately 40 feet tall and constructed from overburden taken from Phase 1. Other facilities to be constructed include a vehicular bridge across Tar Creek to provide access to the Project site, drainage facilities, and roads.

Vehicles used for surface mining activities would include a dozer, an excavator, a wheel loader, and a motor grader. Other vehicles that would be used on-site would include a water truck, a food service truck, and two pickup trucks. Except for one pickup truck, all vehicles would use diesel fuel. Three front-loaders would be used to load customer trucks. The front-loaders also would be used to load rail cars up to three times per week.

The maximum area of potential disturbance would be approximately 403 acres. Ground disturbance areas include grading, excavation, and other earthwork, and do not include areas that would only have vegetation mowed (e.g., fuel modification zones around access roads). The disturbance area includes the 105 acres of geotechnical setback areas (described in more detail below), which may not all actually be disturbed (i.e., would be used as needed). Disturbance areas for each phase and associated facilities are summarized in **Table 2-1**.

TABLE 2-1
ESTIMATED GROUND DISTURBANCE AREAS

Project Facility	Disturbance Area (acres)
Construction Activities	
Access Roads	3.51
Conveyor Belt and Maintenance Road	13.28
Processing Plant and Related Facilities (screening berm, stockpiles, creek crossing, stormwater basin, parking lot)	61.83
Mining Phases	
Mining Phase 1	90.57
Mining Phase 2	61.77
Mining Phase 3	25.39
Mining Phase 4	41.84
Geotechnical Setback Areas	105.1
Total	**403.29**

SOURCE: Freeman Associates, Sargent Quarry Mining and Reclamation Plan, February 2022, Table 20.

Mining Quantities and Phasing

Estimated total mining and excavation quantities for each phase of the Project are shown in **Table 2-2**. The duration of each phase would depend on market demand for sand and gravel materials.

TABLE 2-2
ESTIMATED MINING AND EXCAVATION QUANTITIES (CUBIC YARDS)

Mining Phase	Product	Topsoil[a]	Overburden[b]	Excavation Total
Phase 1	9,600,000	375,000	3,325,000	13,300,000
Phase 2	11,900,000	300,000	4,100,000	16,300,000
Phase 3	2,565,000	135,000	900,000	3,600,000
Phase 4	1,240,000	36,000	540,000	1,816,000
Total	25,305,000	846,000	8,865,000	35,016,000

NOTES:

a. Topsoil represents approximately the top 2 feet of soils on the site.
b. Overburden is the material (e.g., soil and rock) that lies above the economically valuable mineral resources; in this case the mineral resources are sand and gravel suitable for use as concrete grade aggregate.

SOURCE: Freeman Associates, Sargent Quarry Mining and Reclamation Plan, February 2022, Table 4.

Approximately 35 million cy of native materials would be excavated over the life of the Project, including 25,305,000 cy or 38 million tons of product (assuming 1.5 tons per cy). Over the life of the Project, approximately 846,000 cy of topsoil and 8,865,000 cy of overburden would be excavated. The aggregate would be composed of 60 percent sand, 20 percent gravel, and 20 percent clay. The rate of surface mining and mineral extraction would vary from day to day and year to year depending on demand, site conditions and other factors, such as weather. In the initial five years of operation, the maximum amount of product that would be produced in a single day would be 2,500 tons. At full operational capacity, the mining operation could produce a maximum of 6,000 tons of product in a single 10-hour day. Actual amounts would be less on some days, but would not exceed 6,000 tons per day on any day. The maximum amount of product that would be produced in a single year is 1,860,000 tons.

Up to 2,880 tons of product could be sold and off-hauled in trucks in a 10-hour day. The typical haul truck load would be 24 tons, or 16 cubic yards, but there could also be some smaller truck loads as well. On days when loads of product are taken by train (1,600 tons per train, up to three times per week), the maximum product transported off-site would be 4,480 tons per day. In a typical year, about 990,000 tons (660,000 cy) of product would be exported, and the most that would be exported in a single year would be 1,142,400 tons. Aggregate that is not immediately exported would be stockpiled on-site.

A tentative schedule for construction, mining, and reclamation is shown in **Table 2-3**. Surface mining at the Phase 1 and Phase 2 pit areas would be complete in approximately 10 to 13 years, respectively. At maximum production levels, Phase 3 would be completed in approximately 4 years, and Phase 4 would require two years to complete. As noted above, the actual timelines could vary, although the total amount of material to be mined would not exceed the maximum identified amounts in any single year.

TABLE 2-3
TENTATIVE SCHEDULE OF CONSTRUCTION, MINING, AND RECLAMATION ACTIONS

Actions	Begin	Completed	Excavation Total (cy)	Product Total (cy)
Project Approvals and Permitting	n/a	March 2023		
Project Construction	March 2023	December 2023		
Phase 1: Mining	January 2024	January 2034	13,300,000	9,600,000
Reclamation	February 2034	February 2039		
Phase 2: Mining	February 2034	February 2047	16,300,000	11,900,000
Reclamation	March 2047	March 2052		
Construction of Conveyor	January 2047	March 2047		
Phase 3: Mining	March 2047	March 2051	3,600,000	2,565,000
Reclamation	March 2051	March 2056		
Phase 4: Mining	April 2051	April 2053	1,816,000	1,240,000
Reclamation	April 2053	April 2058		
Removal of Conveyor	February 2053	July 2053		
Removal of Plant and Final Reclamation	May 2053	May 2058		

SOURCE Freeman Associates, Sargent Quarry Mining and Reclamation Plan, February 2022, Table 21.

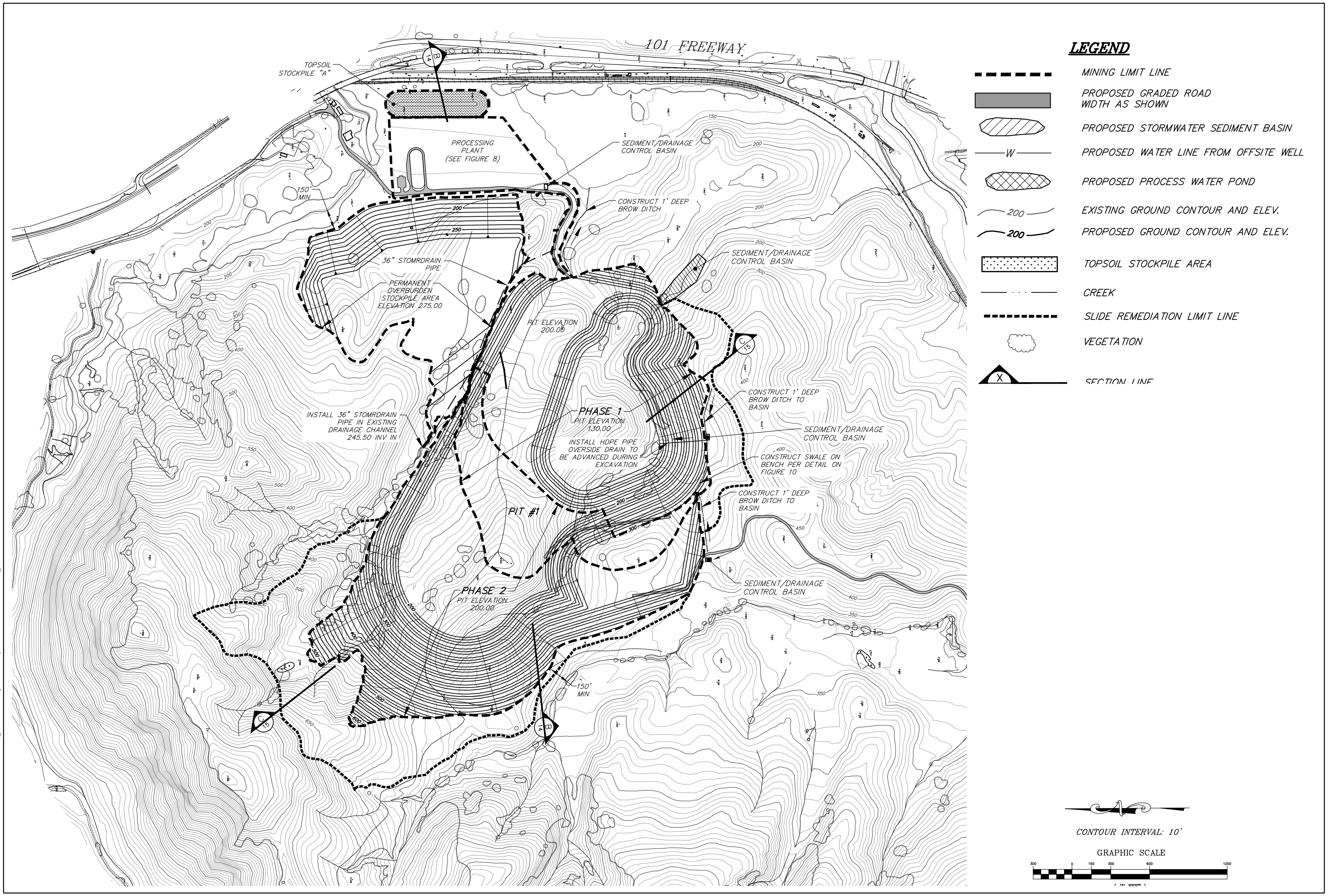
Mining Phases 1 and 2

Based on the typical mining rate of 990,000 tons per year, the estimated duration of mining for Phase 1 would be 10 years, and approximately 13 years for Phase 2. Approximately 29,600,000 cy of material would be excavated, including topsoil and overburden removed.

Phase 1 surface mining would consist of excavating a portion of the quarry area approximately 2,400 feet in length to a maximum depth of 250 feet. During Phase 1 mining operation, a road would be graded from the mining area along the south side of the hillside and used to access the plant and an overburden stockpile area. Overburden would be removed from the Phase 1 mining area and stored in the Overburden Stockpile area west of the processing plant and north of the Phase 1 mining area (see **Figure 2-6**, *Phases 1 and 2 Grading and Excavation Plan*). Approximately 90,000 cy of overburden from Phase 1 would be used to construct the screening berm discussed in Section 2.4.2. Operation in the Phase 1 mining area would excavate the upper 220 feet of the northeasterly trending ridge that is the likely limit of viable product. Once Phase 1 mining is complete, reclamation would begin in this area. To reduce the duration of maximum visibility of mining areas at the ridge, the easterly portion of Phase 1 would be the first portion reclaimed.

Operation in Phase 2 would continue excavation of the northeasterly trending ridge begun in Phase 1. Excavation of the ridge down to the pit level would remove the upper 250 feet of the ridge, which is the likely limit of viable aggregate resource in that portion of the quarry. Reclamation of Phase 2 would begin upon completion of Phase 2 mining.

During Phase 2 mining operation, a road would be graded to the top of the Phase 2 mining area near an elevation of 600 feet located in the western-most area of the Phase 2 mining disturbance.



SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-6
Phases 1 and 2 Grading and Excavation Plan

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Phase 2 overburden would be placed onto the northern, eastern, and western temporary slopes to create the permanent slope of 3:1. Overburden would also be stockpiled in the Phase 1 pit for later use in reclamation. Planned excavation and grading for Phases 1 and 2 is shown in Figure 2-6.

In addition, a small landslide identified in the northern portion of Phase 2 (see Appendix G1, Slope Stability Analysis Report) would be removed.

Mining Phases 3 and 4

Phase 3 and Phase 4 mining areas are located adjacent to each other on two hilltops on either side of Sargent Creek at the southeast portion of Project site. Mining in Phase 3 and Phase 4 areas would occur for a total of six years (March 2046 to April 2052) with roughly 5,416,000 cy of material being excavated, including topsoil and overburden removed. Of this, approximately 3,805,000 cy would be product.

Phase 3 mining operation would begin after completion of Phase 2 mining with removal of topsoil and overburden, which would be stored as shown in **Figure 2-7**, *Phases 3 and 4 Grading and Excavation Plan*. Phase 4 overburden would be stored in an area west of the processing plant and north of the Phase 1 mining area. To transport mined material from the Phase 3 and Phase 4 mining areas to the processing plant, an approximately 1.6-mile-long electric-powered conveyor belt would be constructed as described below.

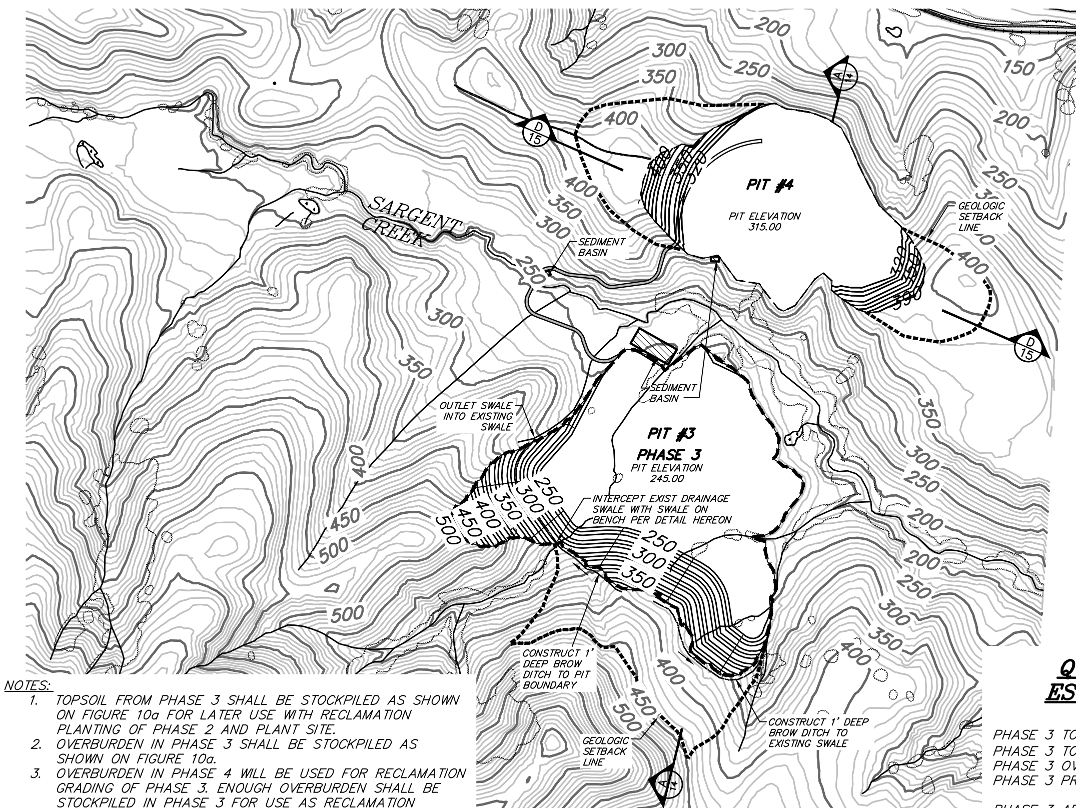
Excavation of the pits in Phases 3 and 4 would remove the upper 200 feet of each hill, starting at the top. This depth is the likely limit of the aggregate resources in these locations (see **Figure 2-8**, *Mining Cross Sections*). Sand and gravel would be excavated from west to east using mobile equipment (e.g., scrapers, bulldozers, excavators, and front-end loaders). During mining Phases 3 and 4, quarry pit slopes would be maintained with slopes of 2:1 and 10-foot-wide benches every 40 vertical feet. Planned excavation and grading for Phases 3 and 4 is shown in Figure 2-7.

Once sand and gravel excavation in Phase 3 is complete, operations would move into the Phase 4 area of the quarry and reclamation would begin in the Phase 3 area. Overburden from Phase 4 would be placed in the excavated area of Phase 3 to construct the permanent slope faces. After mining in Phase 4 is complete, final reclamation would include placing stored overburden from Phase 3 into the Phase 4 pit.

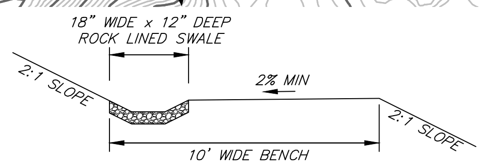
Geotechnical Monitoring and Stability

A geotechnical setback area (i.e., a buffer) is proposed around each of the mining pits to allow a safe setback between cut slopes and adjacent areas, and to account for any unanticipated slope instability associated with surface mining activities. These geotechnical setback areas (shown in Figure 2-4, *Site Plan*) are not proposed for surface mining but may be excavated to provide a more gradual angle to quarry walls in order to achieve greater stability. Slope instability could occur during surface mining as a result of buried landslides, clay lenses,[2] or perched water tables. The total acreage included in these geotechnical setback areas is 105 acres.

[2] A layer of clay material occurring between other soil/geologic layers.



NOTES:
1. TOPSOIL FROM PHASE 3 SHALL BE STOCKPILED AS SHOWN ON FIGURE 10a FOR LATER USE WITH RECLAMATION PLANTING OF PHASE 2 AND PLANT SITE.
2. OVERBURDEN IN PHASE 3 SHALL BE STOCKPILED AS SHOWN ON FIGURE 10a.
3. OVERBURDEN IN PHASE 4 WILL BE USED FOR RECLAMATION GRADING OF PHASE 3. ENOUGH OVERBURDEN SHALL BE STOCKPILED IN PHASE 3 FOR USE AS RECLAMATION GRADING OF PHASE 4. ADDITIONAL OVERBURDEN SHALL BE STOCKPILED AS SHOWN ON FIGURE 10a.
4. TOPSOIL FROM PHASE 4 SHALL BE USED FOR RECLAMATION PLANTING OF PHASE 3.
5. A PORTION OF TOPSOIL FROM PHASE 1 SHALL BE USED AS RECLAMATION PLANTING FOR PHASE 3 AND 4.
6. TOPSOIL STOCKPILES SHALL HAVE A POSTED SIGN SAYING "TOPSOIL".
7. REFER TO FIGURES 14 & 15 FOR MINE CROSS SECTIONS.
8. REFER TO FIGURES 20–21 FOR MINE RECLAMATION CROSS SECTIONS.
9. FOR FULL SIZED PLANS REFER TO APPENDIX G.



DRAINAGE SWALE
NO SCALE

LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- SLIDE REMEDIATION LIMIT LINE
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- X / XX SECTION LINE
- 800 EXISTING GROUND CONTOUR AND ELEV.
- 800 PROPOSED GROUND CONTOUR AND ELEV.

QUARRY EXCAVATION ESTIMATED QUANTITIES

PHASE 3 TOTAL VOLUME	3,600,000 CY
PHASE 3 TOP SOIL (TOP 2 FEET)	135,000 CY
PHASE 3 OVERBURDEN	900,000 CY
PHASE 3 PRODUCT	2,565,000 CY

PHASE 3 ADDITIONAL DISTURBANCE RESULTING FROM SLIDE REMEDIATION (IF NECESSARY) – 25.0 ACRES

PHASE 4 TOTAL VOLUME	1,816,000 CY
PHASE 4 TOP SOIL (TOP 2 FEET)	36,000 CY
PHASE 4 OVERBURDEN	540,000 CY
PHASE 4 PRODUCT	1,240,000 CY

PHASE 4 ADDITIONAL DISTURBANCE RESULTING FROM SLIDE REMEDIATION (IF NECESSARY) – 12.0 ACRES

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX G.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

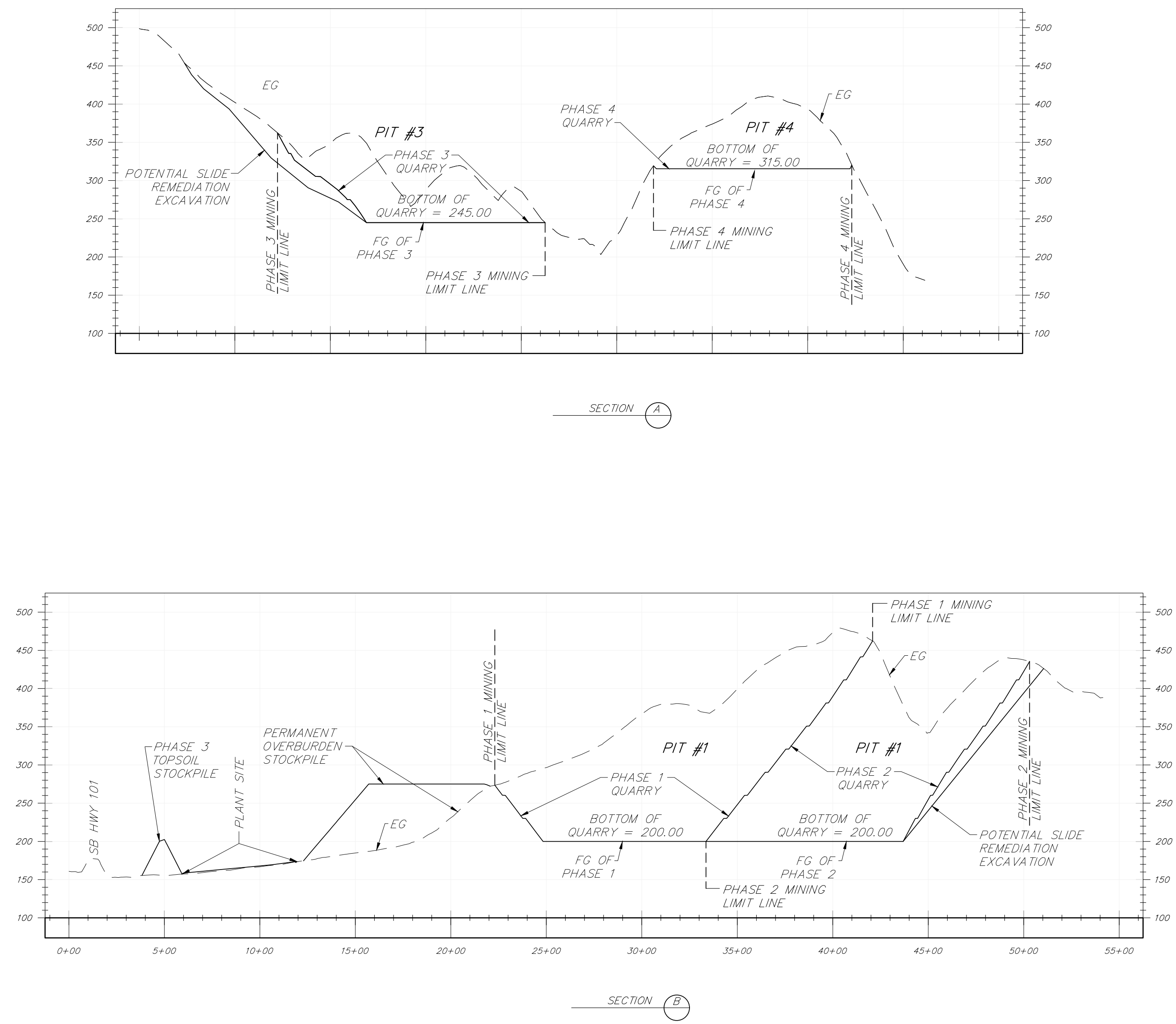
800 0 400 800 160

SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-7
Phases 3 and 4 Grading and Excavation Plan

ESA



SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-8
Mining Cross Sections

ESA

A licensed geotechnical engineer (to be hired by the Applicant) would inspect the mining area and monitor excavation of the quarry cut slopes each time a new bench has been excavated and completed. Inspections of each finished cut slope would begin as each bench is completed and would be conducted annually for at least three years. Upon completion of each inspection, the engineer would submit a report to the County Geologist and quarry operator detailing any concerns regarding the stability of the cut slopes and recommending remedial actions that should be taken by the quarry operator. If the slopes are stable after three years, then inspections by the Applicant's geotechnical engineer would not be required until the next bench is completed. However, during the County's annual SMARA inspection or as otherwise necessary, County inspectors would also inspect slopes for their stability.

Mobile Equipment Assumptions

Mobile equipment would be used to remove the topsoil and overburden, excavate the quarries, and load customer trucks and rail cars. All mobile equipment would use diesel fuel, with the exception of the sales truck, which would use gasoline. With the exception of the scraper, the analysis in this EIR assumes that all equipment would be used on a daily basis. A scraper would be used to remove the topsoil and overburden until the aggregate is exposed. This would occur intermittently, when excavation moves from one location or phase to another. The analysis in this EIR assumes this would occur for one to two weeks at a time, for up to two times each year. Mobile equipment assumptions used in this Draft EIR are shown in **Table 2-4**.

TABLE 2-4
MOBILE EQUIPMENT ASSUMPTIONS

Equipment	Number	Location/Purpose	Days/Year	Hours/Day
Dozer	1	Quarry Excavation	310	10
Excavator	1	Quarry Excavation	310	10
Wheel Loader	1	Quarry Excavation	310	10
Wheel Loader	3	Processing Plant/Customer Loading	310	11.5
Motor Grader	1	Quarry Excavation	310	10
10,000 Gallon Water Truck	2	Dust Control at All Locations	310	10
4,000-Gallon Water Truck	1	All Locations	As needed	As needed
Scraper	1	Quarries/Remove Overburden	28	10
Service Truck	1	All Locations	310	10
Managers Truck	1	All Locations	310	10
Sales Truck	1	All Locations	310	10

SOURCE: Freeman, 2021.

Mining Below the Groundwater Table

Surface mining would be unlikely to encounter groundwater because groundwater elevations are typically below identified excavation levels (see Section 3.10, *Hydrology and Water Quality*, for a discussion of groundwater conditions at the Project site). If perched groundwater (i.e., groundwater separated by an unsaturated zone) is encountered during mining, then the water would be drained away from the excavation area using standard industry methods such as brow ditches[3] or pumps. The water would be drained into the low point of the nearest mining pit and allowed to percolate into the groundwater table. Once the mining area is drained and the area slopes stabilized, mining activities would proceed as planned.

Should the water table (i.e., groundwater that is not perched) be encountered during mining, then wet mining would be initiated. Wet mining uses a dragline crane[4] or a large long-reach excavator that can cast its bucket below the water surface and retrieve material. Sand and gravel harvested underwater would be placed in a stockpile area where the material could drain prior to transport back to the processing plant. Water draining from this stockpile would be channeled to drain back into the pit area. Dragline cranes would be used to harvest material to an elevation of approximately 45 feet below the water surface. Deadman-pulley systems[5] would be used to harvest to approximately 90 feet below the water surface, if necessary.

Mined out phases that include exposed groundwater ponds would be filled with overburden or other imported fill, if necessary, to bury and cap the groundwater and not leave any groundwater exposed to evaporation after reclamation is completed. At least 20 feet of fill would be placed over the elevation of the groundwater's surface. Once the bottom elevation has been established, other reclamation actions would be taken as described in Section 2.6.

Conveyor Belts and Access Road

Material mined from the Phase 1 and Phase 2 mining areas would be moved to the on-site processing plant using a conveyor belt that follows the alignment of existing unpaved cattle ranch roads for approximately 0.3 miles (see Figure 2-6). The conveyor belt would be 48 inches wide and would be raised on supports an average of 4 feet off the ground. A 22-foot-wide road would be constructed next to the conveyor belt. The conveyor belt would be powered by electricity using power supplied from the processing plant site.

To transport mined material from the Phase 3 and Phase 4 mining areas to the processing plant, the conveyor belt would be extended to approximately 1.6 miles in length following completion of Phase 2 mining. The extended portion of the conveyor belt also would be 4 feet wide. Supports would be spaced every 10 to 20 feet, but could be extended with truss bracing to up to 60 feet apart if necessary. Typical heights off the ground surface would vary from 3 to 5 feet, but would

[3] A brow ditch is a ditch constructed to intercept and convey minor surface runoff. They are placed above cut slopes.

[4] A dragline crane excavates by drawing a bucket attached by cables toward the machine. The crane has a bucket attached by two cables, which allows for control of the bucket as it is brought toward the machine.

[5] Deadman pulley systems consist of a bucket supported by a cable connected on both sides of the pit to stationary poles. The bucket moves slowly from one side of the pit to the other and harvests material from beneath the water.

be increased in places to allow for large animals to cross under the structure. The belt would be supported by a series of rollers to prevent sagging, typically spaced 6 inches to 12 inches apart.

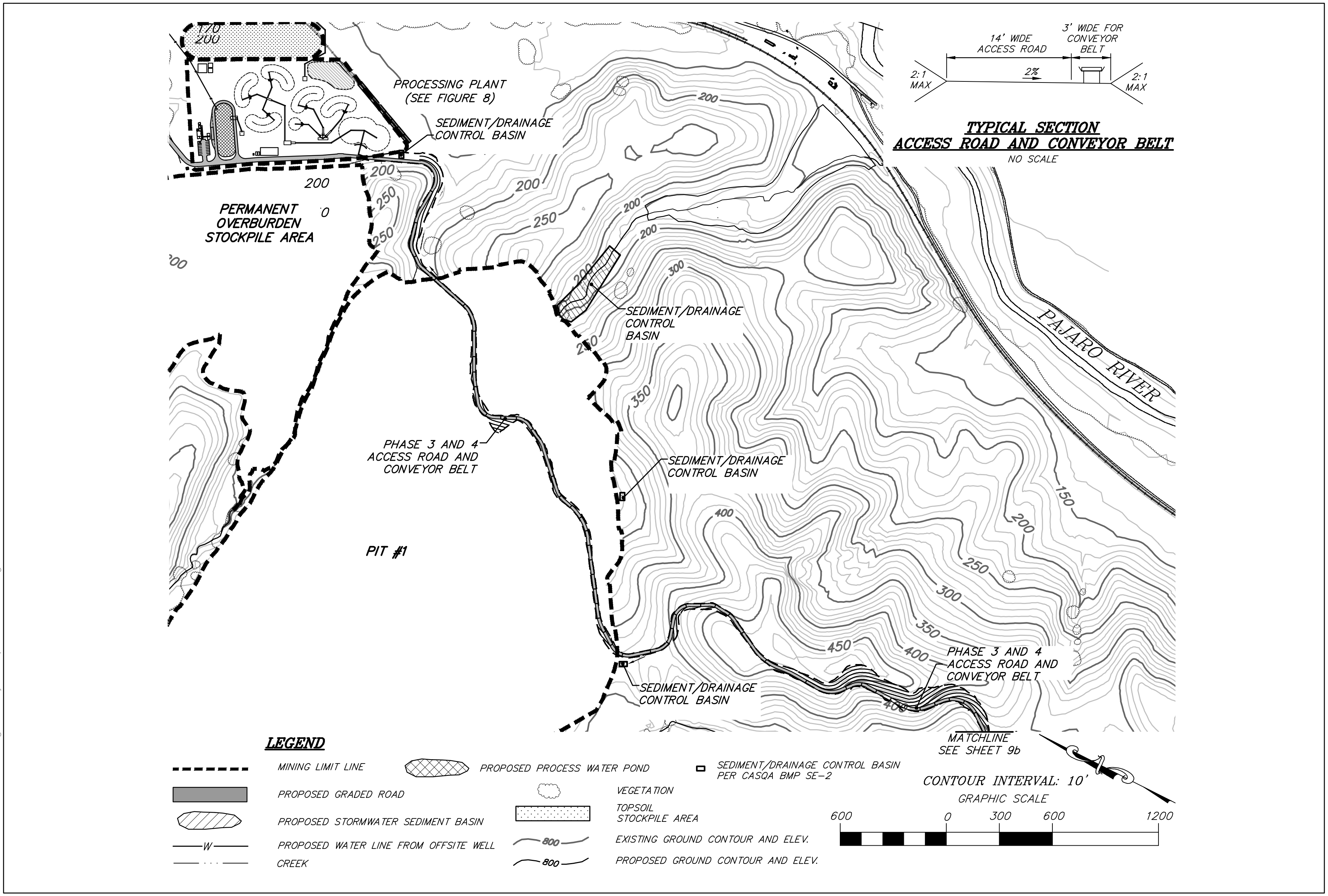
A 22-foot-wide dirt road would be constructed alongside the conveyor belt for access to the mining areas and to maintain the conveyor belt. The conveyor belt and maintenance road would generally follow the east side of the western ridge of the Sargent Valley as shown in **Figure 2-9**, *Phase 3 and 4 Conveyor Belt and Maintenance Road Detail (North)*, and **Figure 2-10**, *Phase 3 and 4 Conveyor Belt and Maintenance Road Detail (South)*. With the exception of the creek crossing, which would be an arch culvert, the conveyor pathway (including the maintenance road) would generally be located upslope from Sargent Creek.

At the end of Phase 4 mining operation, the conveyor belt would be removed, and its path regraded and revegetated. The maintenance road that runs parallel to the conveyor belt would be left in place to continue providing access to the mined areas during reclamation activities. After reclamation is complete, the maintenance road may be retained for use by cattle operations.

2.4.2 Processing Plant

An approximately 62-acre processing area would be developed in the northeastern portion of the site. The aggregate processing plant components would occupy approximately 14 acres, with stockpiles occupying the remaining area. The processing area would include the aggregate processing plant, shop and maintenance buildings, vehicle parking areas, storage yard (miscellaneous equipment and materials), office/scale house, stockpiles (product, overburden, and topsoil), process water pond, and stormwater basins (see Figure 2-5a, *Processing Plant Site Plan*). The office/scale house would be located near the entrance to the quarry. Vehicles used for mining would be parked near the rock processing plant and the stockpiles at the end of work hours. Aggregate stockpiles would be located to the east of the processing plant. The processing plant would be powered by electricity. A generator would be located on-site to provide backup power in the event of an electrical outage. The generator would be 65 kilovolt-ampere and rated Tier 4 (currently the strictest rating for air pollutant emissions for off-road engines). The generator would be used on average approximately 50 hours per year for testing, maintenance, and emergency use.

Prior to construction of the permanent processing plant, a temporary prefabricated sand and gravel processing plant would be used, to be located in the processing area (see Figure 2-5b). A temporary processing plant can be set up quickly and easily, allowing for mined materials to be processed before the permanent plant is completed. It also provides a lower-cost option for processing while the Project ramps up and the customer base is being developed. The temporary plant would be brought to the plant site in four separate loads and assembled on-site. It would be capable of producing 250 tons of aggregate per hour for a total of 2,500 tons in a 10-hour day. Piping would be used to connect the plant to the new well and to the process water pond for settling. Once the sediment has settled out of the used water, that water would be pumped back to the temporary plant for reuse. The temporary plant would use approximately 200 gallons of water per minute, and once fully operational, would use a mixture of 80 percent reused water and 20 percent new well water.



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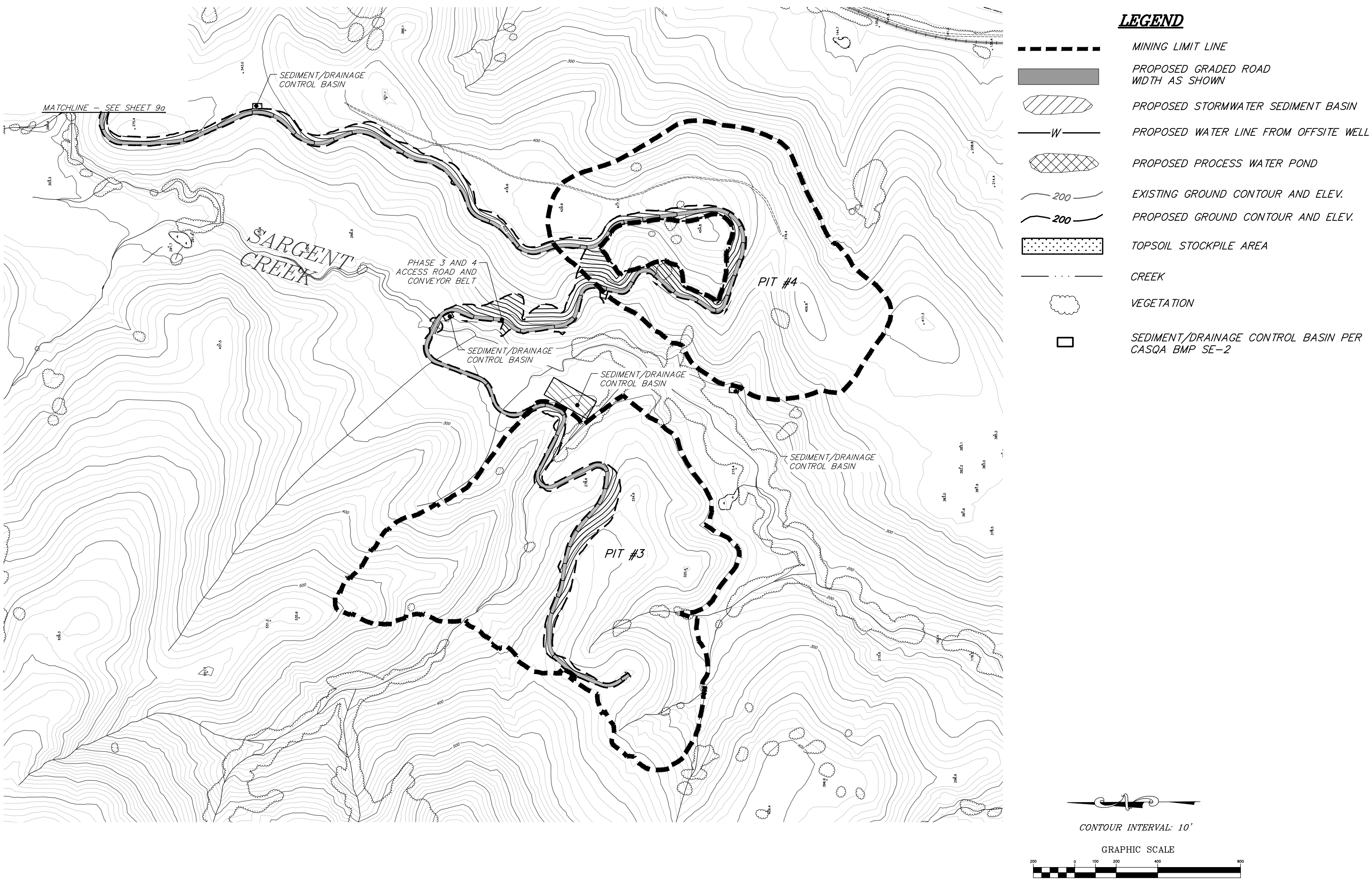
SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-9
Phase 3 and 4 Conveyor Belt and Maintenance Road Detail (North)

ESA



SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-10
Phase 3 and 4 Conveyor Belt and Maintenance Road Detail (South)

ESA

SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

The temporary plant would be able to process up to 250 tons of aggregate per hour (for a total of 2,500 tons in a 10-hour day), compared to 600 tons per hour that the permanent plant would process. The timing of the permanent plant would depend in part on demand for aggregate; it is proposed to be constructed in the first five years of operation, and could be constructed as early as the first year.

A new groundwater well is proposed to the north of the screening berm, along with a pipeline to convey the groundwater to the processing plant. This well would produce water for washing aggregate, dust control, and fire suppression. Water for firefighting would be stored in a portable 10,000-gallon water tank, which would be relocated with each phase of mining to serve the active phase. According to the Sargent Ranch Quarry Fire Protection Plan (Dudek 2020; see Appendix L, page 12), water would be stored in this tank in compliance with National Fire Protection Association (NFPA) 22, Standard for Water Tanks for Private Fire Protection. The tank would be inspected and maintained regularly, including filling as needed. The tank would be approximately 13 feet tall and 12 feet in diameter and would be placed on the side of the access road for the active phase with adequate space (18 feet of travel width plus 10 feet of additional width, for a distance of 50 feet) to allow fire engines to park and connect to the tank while leaving the road open to other travel.

During mining operation, excavated product would be transported via a conveyor belt (see previous section on conveyor belt/access road) to the processing plant. All excavated sand and gravel would be washed and screened at the rock processing plant to remove fines (i.e., silt and clay) and to produce finished products for sale. Materials would be transported from the Project site to customers using a combination of haul trucks and rail cars, as described in Section 2.4.2. Up to three front-end loaders would load customer trucks. A new rail spur would be constructed approximately 900 feet south of the rail undercrossing of U.S. 101. The spur would follow the southern edge of the screening berm and processing area, splitting to two spurs as it reaches the processing area, as shown in Figure 2-5, *Processing Plant Site Plan*. An overhead conveyor system also would be installed to load the rail cars. The new rail spur would be approximately 1,000 feet long.

As mined materials are processed and sorted, they would be added to stockpiles within the processing plant. Some materials would be crushed and sorted into stockpiles by a radial stacker[6] and conveyors. Materials would be kept wet to minimize dust emissions. Sprinklers and water trucks would be used to control dust at the processing plant and on stockpiles. The processing plant would also contain a process water pond, which would be used to retain water for reuse in aggregate processing. Groundwater would be pumped from a new on-site well to supply water to the process pond and for dust control as part of processing plant operation (see Section 2.4.7, under the subheading *Water Supply and Use*, for details).

6 A radial stacker is a conveyor that sits on a wheeled truck, which runs on a railed track that forms a radius semi-circle around the stacker. The advantage of the radial stacker is that it gives the operator the option to create many multiple stacks of material or one continuous radial stack.

Screening Berm

An approximately 40-foot-tall visual screening berm would be constructed along the east side of the processing plant, adjacent to U.S. 101 (see Figure 2-5a, *Processing Plant Site Plan*). The earthen berm would be constructed using approximately 90,000 cy of overburden from Phase 1. The berm would be graded to resemble the form and shape of the surrounding hill slopes. It would then be planted with native and naturalized shrubs, grasses, and trees and irrigated to blend with the surroundings and screen views of the processing plant and Phase 1 and Phase 2 mining operation from U.S. 101. The screening berm would remain in place after Project completion.

Site Access and Vehicle Trips

The Project site would be fenced and gated, and signage posted in accordance with County requirements (County of Santa Clara 2020a). A three-strand barbed wire fence would be placed along the perimeter of the mining area and inspected monthly by the quarry manager. All breaks would be repaired promptly upon identification.

All visitors would be required to check in at the administration office, have proper safety gear, and be accompanied to any restricted areas. Parking for all customer and employee vehicles would be available at the processing plant site.

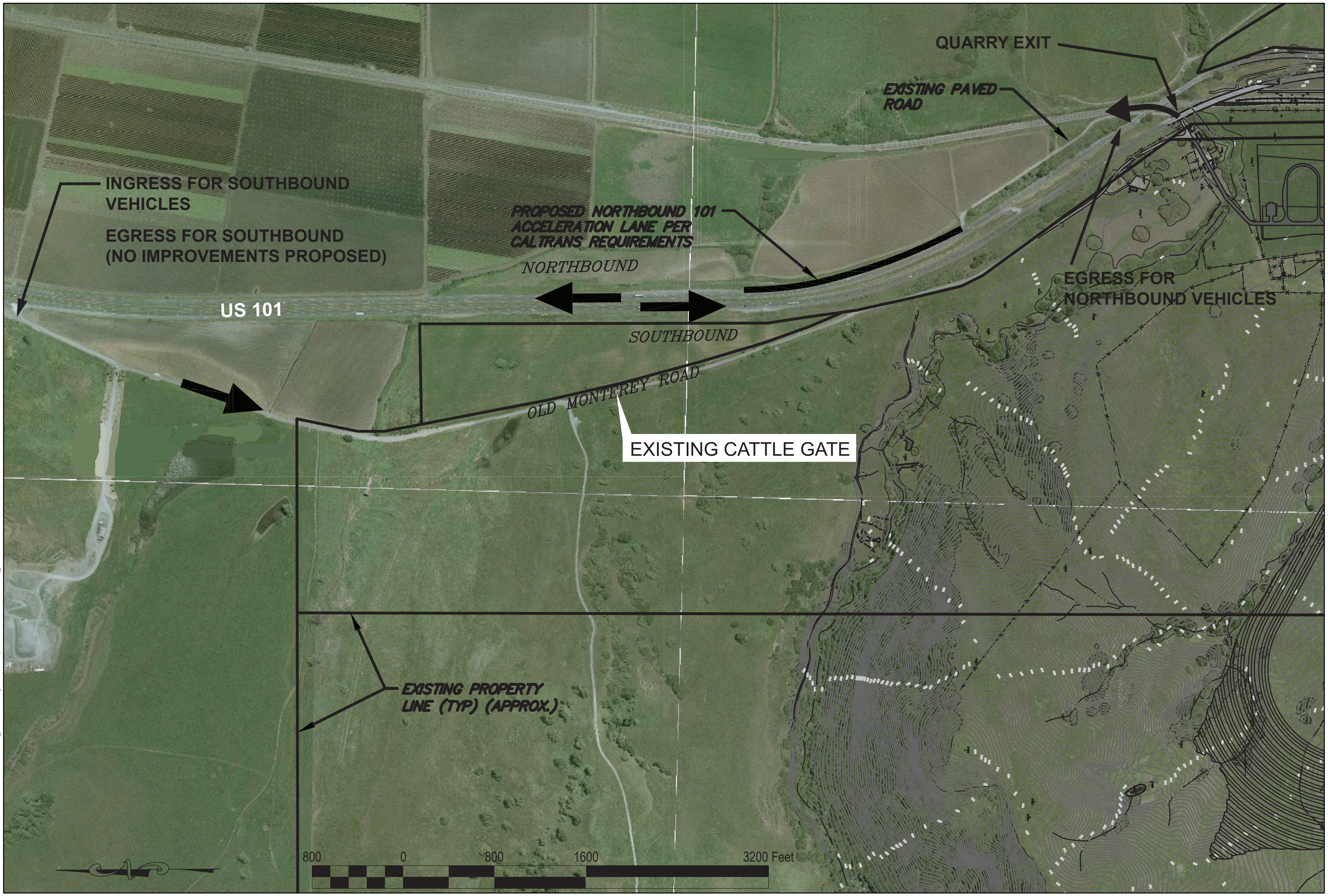
The primary market for product is projected to be the construction industry operating in Santa Clara County (80 percent of demand). The remainder of the production would be distributed in San Benito County (10 percent) and Monterey County (10 percent). The finished product would be transported by a combination of trucks and rail cars, as described below.

Vehicle Access and Roadway Improvements

Vehicle and truck access, including emergency access, to and from the Sargent Ranch Quarry would occur via U.S. 101, as shown on **Figure 2-11**, *Ingress and Egress*. Access to the Project site from the north would occur via southbound U.S. 101 and Old Monterey Road through a gated entrance to an existing private access road. Trucks leaving the site traveling to destinations south of the quarry would exit onto Old Monterey Road and then onto southbound U.S. 101 via an existing acceleration lane. Trucks traveling to destinations north of the quarry would use the Sargent Ranch undercrossing of U.S. 101.

To facilitate truck access, an existing U.S. 101 on-ramp east of the Project site would be improved prior to the start of mining to include a 12-foot-wide, 0.25-mile-long acceleration lane for trucks accessing northbound U.S. 101. See **Figure 2-12**, *Northbound Acceleration Lane Improvements*. This on-ramp would require an encroachment permit from Caltrans and would be built according to Caltrans specifications.

The northern portion of Old Monterey Road is approximately 20 to 24 feet wide. This section, which lies within a County right-of-way, would be improved as needed with new pavement overlaid on the existing roadway. Roadway shoulders approximately 3 feet wide would be added as needed on both sides of the road. The southern portion of the private roadway located on Sargent Ranch would be improved with a 1-inch pavement overlay on the existing pavement, where needed.



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SOURCE: Triad/Holmes Associates, 2015

SCC Sargent Quarry

Figure 2-11
Ingress and Egress

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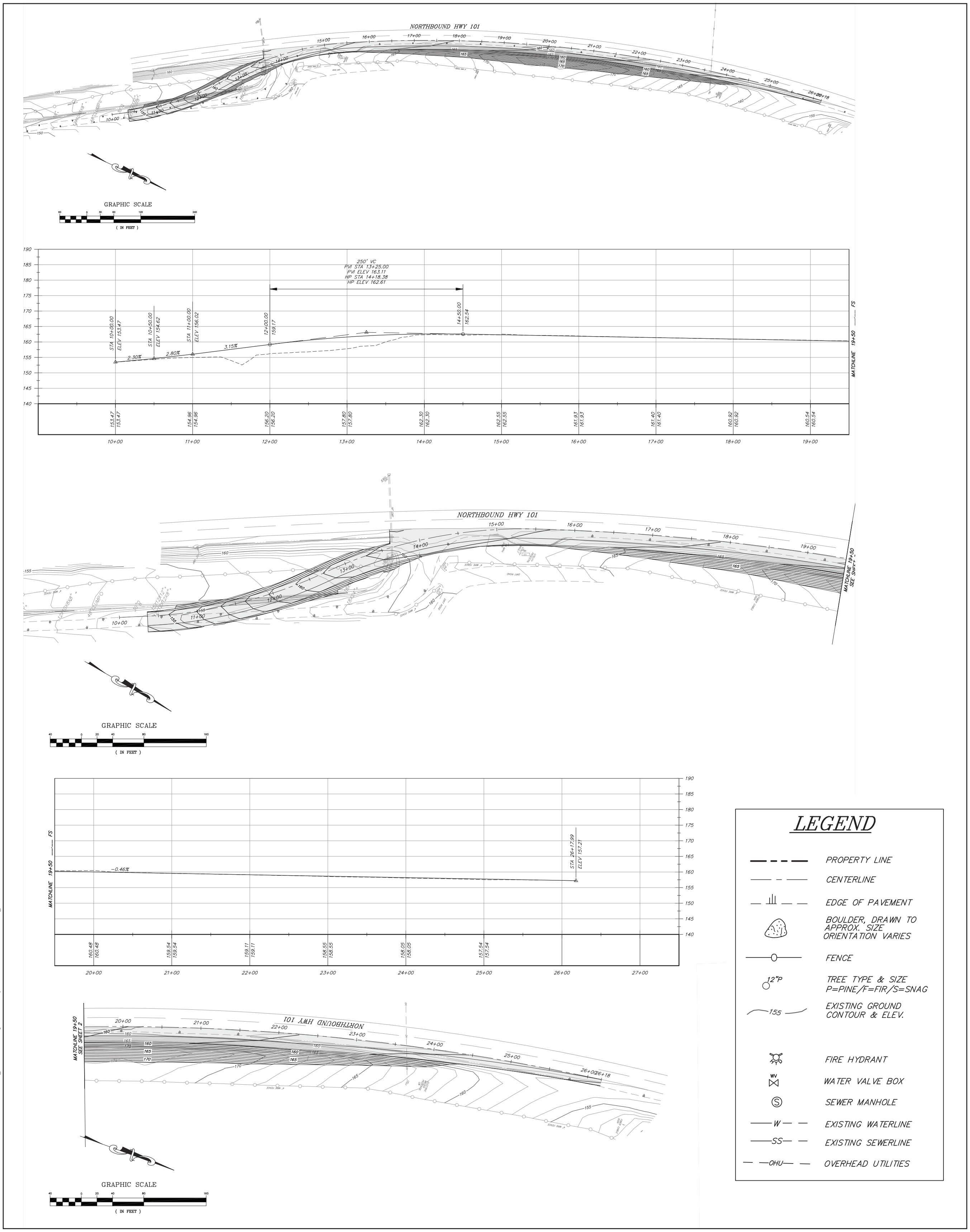


SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-12
Northbound Acceleration Lane Improvements

ESA

Old Monterey Road, both within the County right-of-way and the private portions, would be repaired and maintained, with additional pavement overlays, and removal and repair of roadway sections if needed, approximately every 5 years during the 30-year term of the mining operation.

A free-span bridge is proposed over Tar Creek to provide truck access to the processing plant from Old Monterey Road. See **Figure 2-13**, *Tar Creek Bridge*. The bridge would replace an existing at-grade, in-water crossing and would span the banks of the creek and the majority of the riparian area. The bridge would be approximately 24 feet wide and 100 feet long with a 70-foot span over Tar Creek. Berms would be installed on both sides of the bridge to direct stormwater flows into Tar Creek and to elevate the bridge.

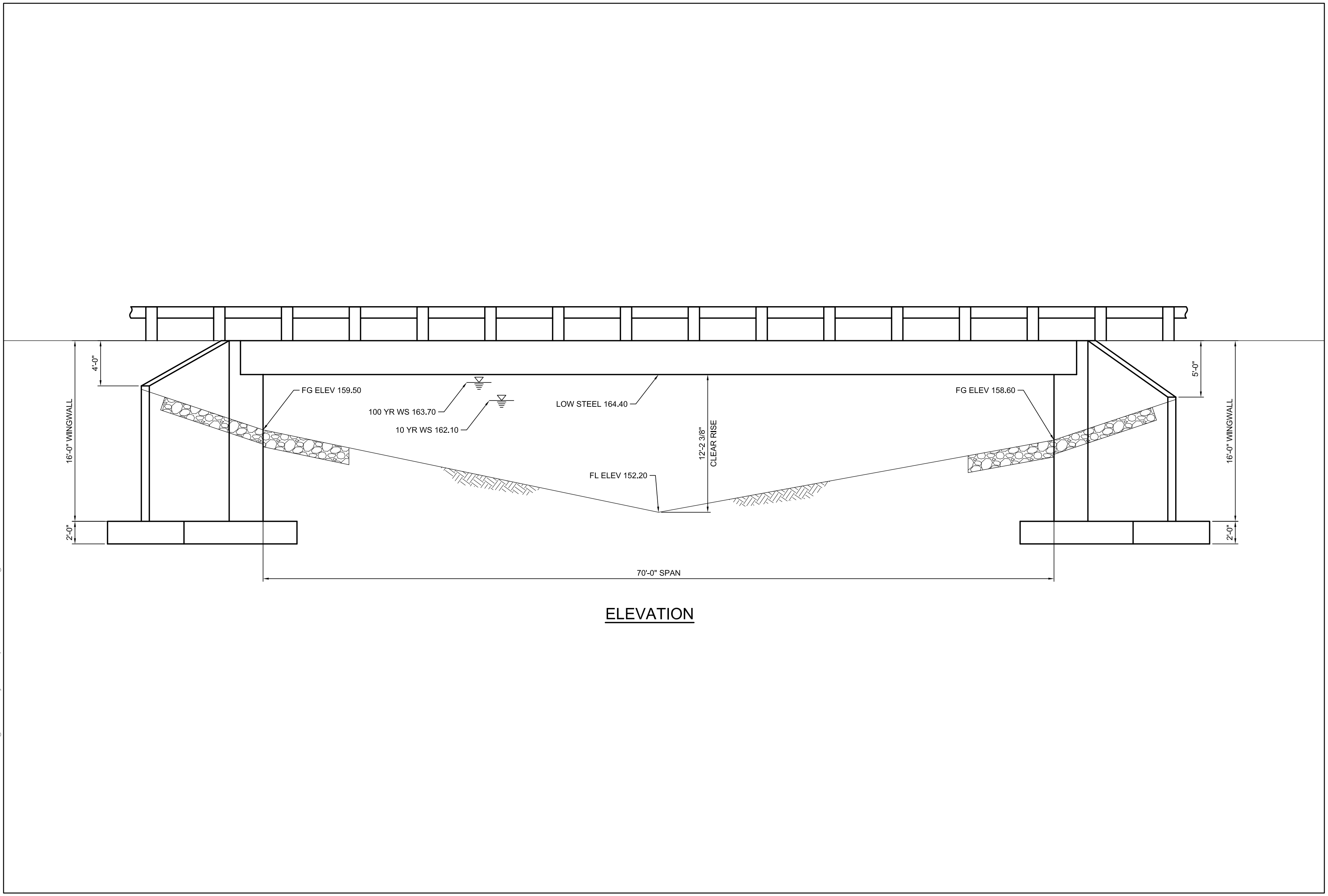
Based on site constraints, the size of the trucks to be used by customers, and the safety requirements for safe loading of trucks, the processing plant would have room for three loaders to be in use at any given time. These would be able to load a total of 12 trucks per hour operating at full capacity (four trucks per hour per loader). On a typical day, there would be 120 haul trucks per day. The maximum number of haul trucks would be 139 trucks per day.

In addition to the haul trucks, there would be approximately eight vehicles arriving at the site per day for material delivery and maintenance and up to 15 employee vehicles.

Freight Rail Access

Rail tracks are located to the east of Sargent Ranch along U.S. 101. As part of the Project, a rail spur would be constructed within the processing plant area. The spur would accommodate up to 16 rail cars. Rail cars would be filled at the processing plant during the day and would sit on the rail spur in the processing plant once filled. Up to three times per week, a locomotive would haul the rail cars to the main track (a process that takes approximately 30 minutes from start to finish) where they would be connected to a northbound train. Trains would be loaded during the day, but connection to the train and rail transport would be scheduled to take place at night (generally between 11:00 p.m. and 5:00 a.m.). As discussed above, up to 1,600 tons of material could be transported by train at one time, or up to 4,800 tons per week. A maximum of 249,600 tons annually could be transported by rail, assuming three times per week every week of the year.

The quarry would contract with Union Pacific Railroad, or one of its subcontractors, to provide freight cars and locomotives to transport the cars. The cars would be added to an existing train carrying other freight, rather than requiring a new separate train just for the Project. The primary destination for the trains would be the Graniterock facility at 11711 Berryessa Road in San Jose. The Graniterock facility at the Port of Redwood City would be an additional destination. Both stops have existing quarry material unloading facilities and infrastructure that could handle the Project's product.



SOURCE: Freeman Associates, 2020

SCC Sargent Quarry

Figure 2-13
Tar Creek Bridge

2.4.3 Stormwater Drainage

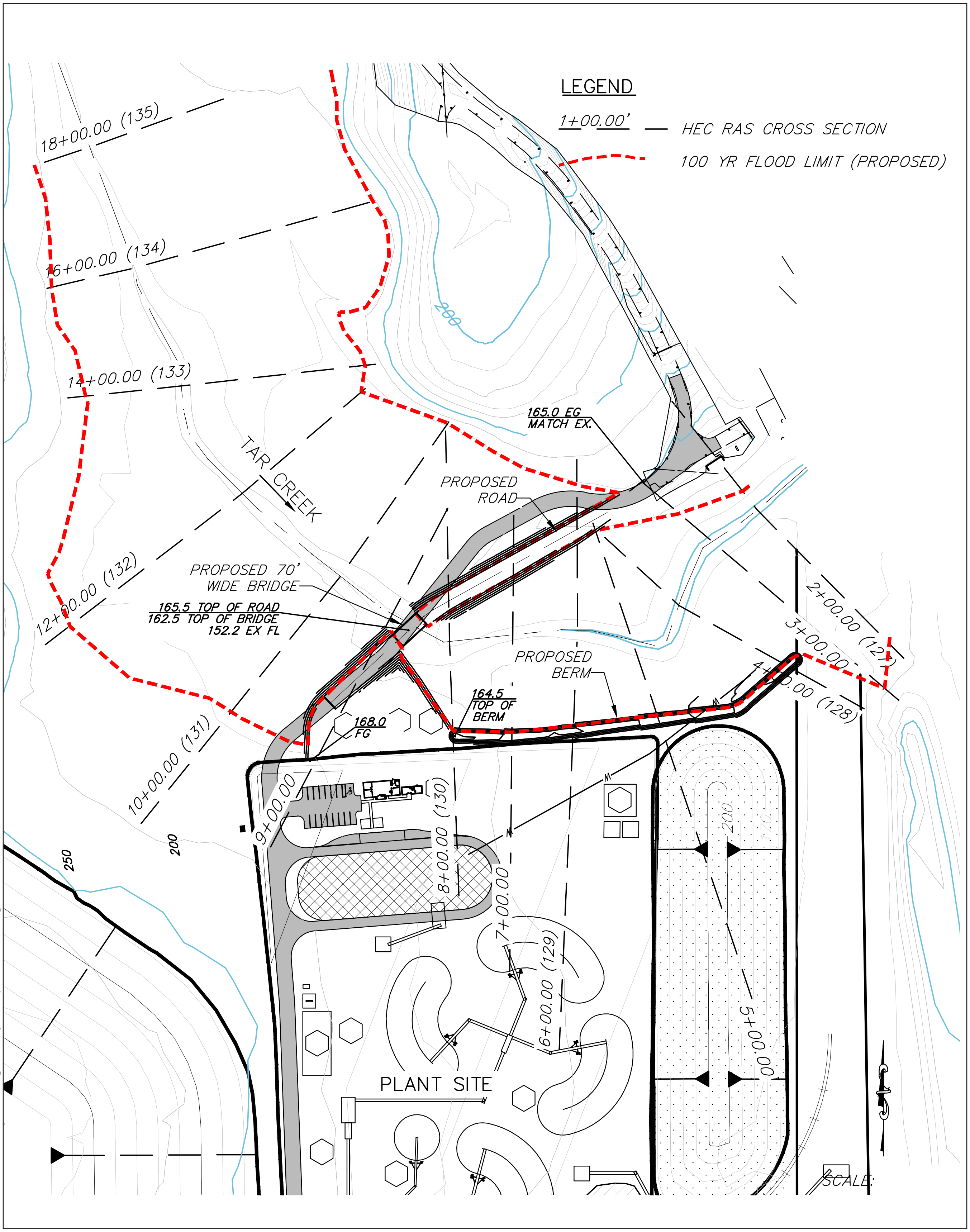
For the portion of the property within the proposed Phase 1 and 2 areas, stormwater from the higher elevations and ridges currently flows into two ephemeral drainages and several drainage channels that join Tar Creek just north of the proposed processing plant area. Existing drainage from the proposed Phase 3 and 4 mining areas sheet flows to Sargent Creek, which then flows south to the Pajaro River.

The quarry would cease operation on any day with 0.50 inches or more of rain to preserve quarry equipment and to maintain safe operations for employees. However, the storm drain conveyance structures and creek crossings are designed to convey the 100-year storm event.

A 5-foot-tall flood protection berm would be constructed around the northern boundary of the processing plant site. Another 4-foot-high berm would be constructed on the north side of Tar Creek to channel flows under the proposed 70-foot-wide Tar Creek bridge and to bring the plant access road above the flood plain (see **Figure 2-14**, *Processing Plant and Creek Crossing Detail*). Both berms would be armored with 12-inch rip rap to prevent scour. In addition, bridge abutments would be reinforced with 12-inch rock placed at a thickness of 1.2 feet and extending 7.6 feet horizontally, 6 feet vertically and 25 feet down stream of abutments.

Surface runoff from the processing plant would be directed via drainage ditches and swales to a stormwater sediment basin). According to the Reclamation Plan, this basin would receive all surface water from areas disturbed by mining via drainage ditches and swales (Appendix B). Stormwater in this basin would be allowed to percolate on-site or be reused for processing plant operations (e.g., dust control, washing aggregate materials). This basin also would receive runoff from swales surrounding the adjacent overburden stockpiles, containing stormwater from disturbed area to within the Project site. The basin at the processing plant would be approximately 0.21 acre (surface area) and have a capacity of 0.45 acre-feet in order to accommodate the 24-hour, 100-year storm event. Another sediment basin would be constructed immediately east of the Phase 3 pit (see Figure 2-7, *Phases 3 and 4 Grading and Excavation Plan*), with a surface area of 1.17 acres and a capacity of 5.44 acre-feet. An additional eight sediment basins would be constructed intermittently along the conveyor belt/access road as shown Figure 2-9, *Conveyor Belt and Maintenance Road Detail (North)*, and Figure 2-10, *Conveyor Belt and Maintenance Road Detail (South)*. These basins would have surface areas ranging from 0.01 to 0.34 acres and capacities of 0.01 to 1.45 acre-feet.

Stormwater that falls within the quarry would be directed into drainage ditches and swales and conveyed to stormwater basins within the mining pits (see **Figure 2-15**, *Mining Drainage Plan*). These ditches would be maintained during mining and relocated as mining moves into new areas. Runoff from the quarried slopes and benches would be directed down to the quarry floor through drainage ditches. Energy dissipaters would be located at the base of the slope where the runoff would flow into ditches that drain into the pit and basins. Runoff from the quarry slopes would join runoff from the quarry floor in the pit and basins. The basins would retain stormwater until it percolates into the ground.

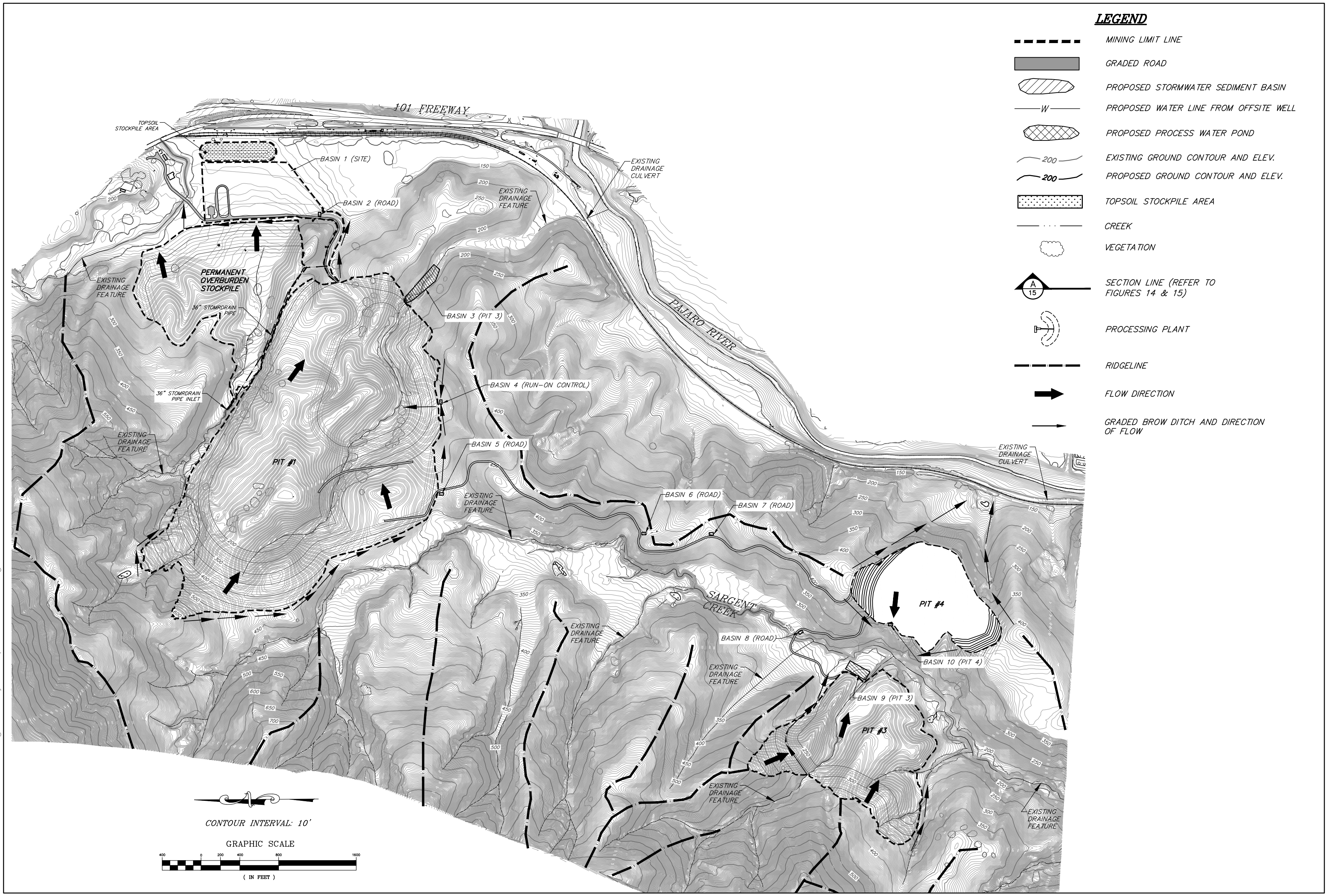


SOURCE: Triad Holmes, January 2022

SCC Sargent Quarry

Figure 2-14
Processing Plant and Creek Crossing Detail

ESA



SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-15
Mining Drainage Plan

Conveyance of Off-Site Stormwater through Mining Areas

Although the quarry and processing plant would not operate during a significant storm event (i.e., predicted 0.50 inch or more of rain), the storm drain conveyance structures and creek crossings are designed to convey the 100-year storm event.

At two locations, off-site watershed areas at higher elevations would drain through or adjacent to proposed mining areas. For Phases 1 and 2, concentrated flows from an approximately 43-acre off-site area above and northwest of the Phase 1 and Phase 2 areas would be conveyed between the Phase 1 pit and the overburden stockpile area via a 36-inch, inlet-controlled culvert located between the pit area and the overburden stockpile, as shown in **Figure 2-16**, *Drainage Detail - Phases 1 and 2*. The culvert would continue further southeast under the proposed access road and discharge the flows at a natural drainage depression beyond the active mining areas. Due to the high velocity in the outlet, 18-inch rock in a layer 2 feet thick would be placed for the 25 feet downstream of the outlet.

Runoff from an approximately 75-acre area above the Phase 3 pit would be collected in a 12-foot-wide, 2-foot-deep drainage swale and conveyed along several benches around the Phase 3 mining area. The water in the proposed swale would flow into an existing natural drainage swale on the east side of the Phase 3 mining area, as shown in **Figure 2-17**, *Drainage Detail - Phases 3 and 4*. The flow from the swale would continue under the conveyor belt and access/maintenance road via three 36-inch culverts and flow into Sargent Creek just upstream of the natural drainage swale outfall into the creek. The depth of flow in the culvert would be 3 feet. Due to velocities at the outfall, rip rap would be placed along the culvert.

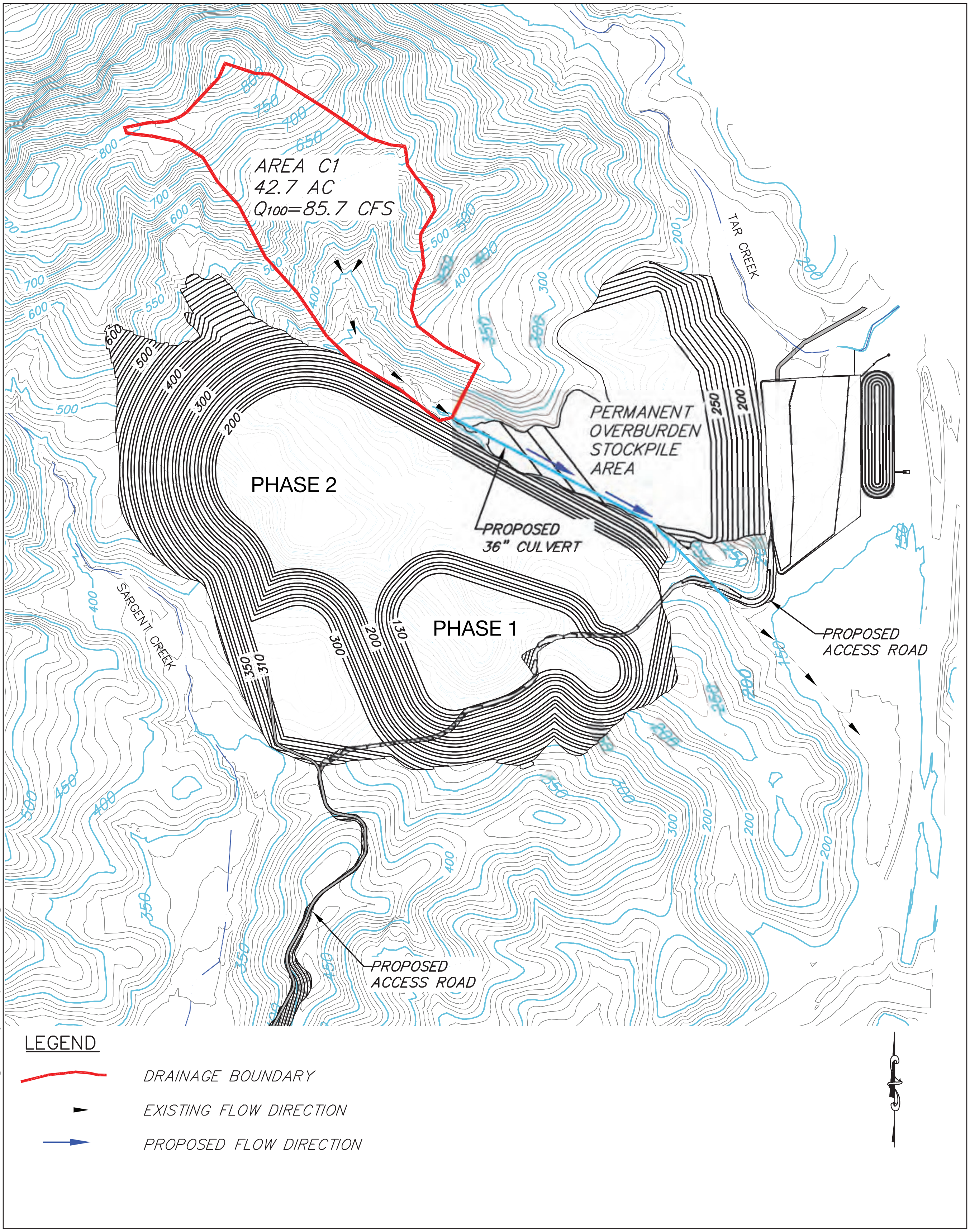
An arch culvert (i.e., a culvert shaped like a half circle) would be installed for use in crossing Sargent Creek. The culvert would span the creek bed, leaving the channel bottom undisturbed and would be able to convey flows in a more natural manner than if the conduit was fully closed. The culvert would have a 35-foot span and 11-foot rise. The slopes and inside edge of the culvert would be armored with rip-rap to prevent scouring during higher creek velocities.

2.4.4 Erosion and Sediment Control

The potential for erosion would be minimized with a combination of drainage improvements, revegetation, and management of stockpiles. These measures would include the construction of benches, interceptor and collector ditches, and energy dissipaters at the base of slopes, installation of culverts, drop inlets and over side drain pipes, and use of sediment basins as shown in Figure 2-15. Drainage improvements, including sediment basins, would be designed to accommodate the 24-hour, 100-year storm event.

Initial grading for any Project phases and at the processing plant area would be conducted primarily during the dry season from approximately April 16 through October 14. The quarry would be graded to achieve positive drainage[7] consistent with the performance standards contained in

7 A drainage surface that is graded so that water collects and flows to a lower elevation is referred to as "positive drainage."

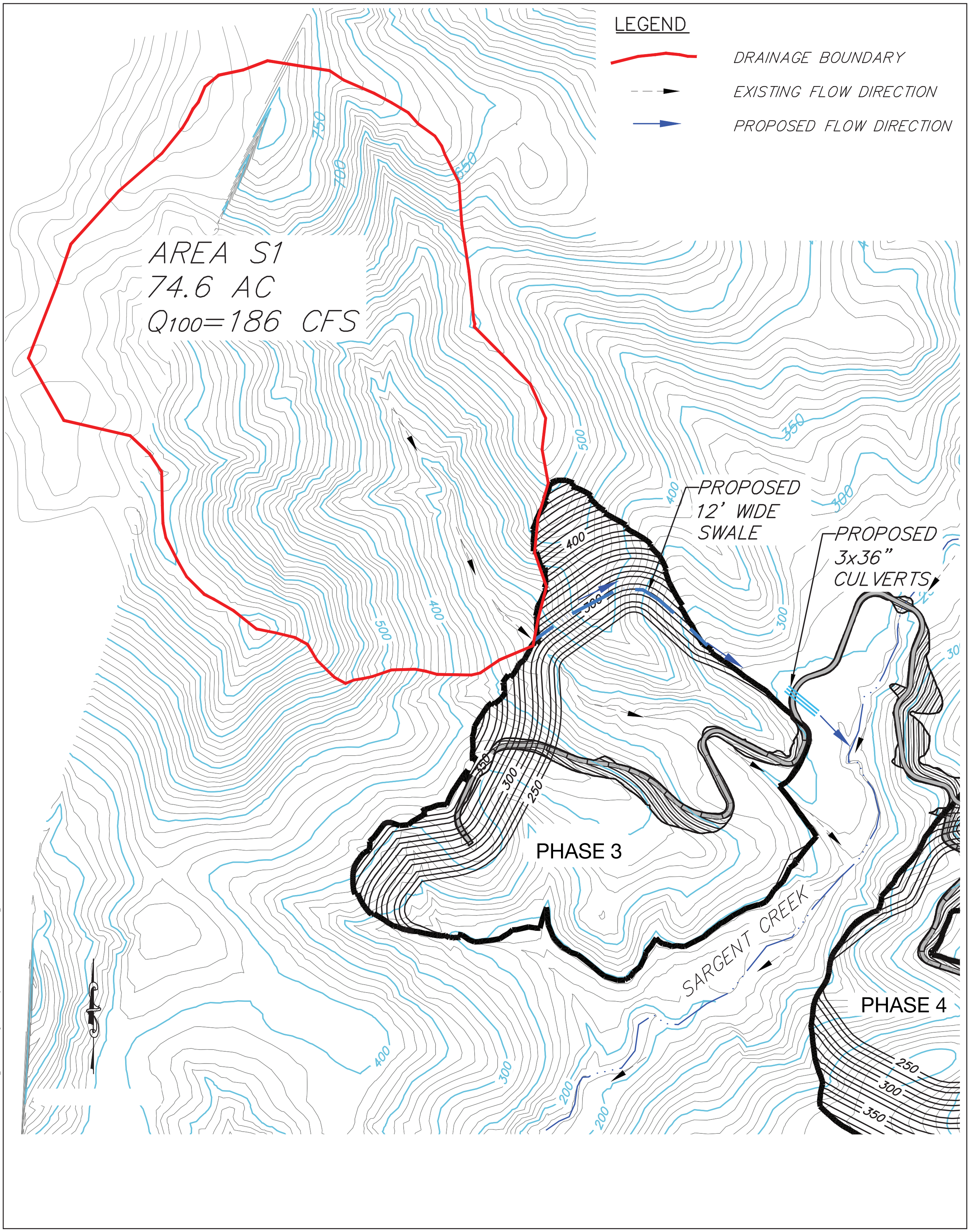


SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

SOURCE: Triad Holmes, January 2022

SCC Sargent Quarry

Figure 2-16
Drainage Detail - Phase 1 and 2



SOURCE: Triad Holmes, January 2022

SCC Sargent Quarry

Figure 2-17
Drainage Detail- Phase 3 and 4

SMARA's implementing regulations for drainage and diversion. Surface runoff and drainage from surface mining activities, for example, would be controlled by berms, silt fences, sediment 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 have been designed to handle runoff from not less than the 20-year/1-hour intensity storm event consistent with regulatory Performance Standards for Drainage, Diversion Structures, Waterways, and Erosion Control (14 Cal. Code Regs. Section 3706(d)).

BMPs for sediment control would be used when grading work is undertaken during the wet season. The proposed Industrial Stormwater Pollution Prevention Plan (SWPPP) (Appendix I) identifies a wide range of BMPs to be used, including but not limited to coir wattles (coconut fiber rolls), silt fences, sediment traps, and stilling basins in and adjacent to disturbed areas (see Appendix I for a complete list. A water truck would be used for wetting down work areas while the ground surface is being ripped or disked. Drainage ditches in loose soil would be lined with rock to reduce soil erosion. Sediment basins would be cleaned regularly to maintain proper function. Open drainage ditches over loose, erodible soil would be lined with crushed rock. Drainage ditches on the benches have a minimum lateral slope of four percent to ensure proper drainage. Energy dissipaters would be placed where drainage ditches flow into the basins and or the pit, and in appropriate locations where over-side drain culverts would carry stormwater or collector ditches flow downslope. Unpaved areas, subject to vehicular traffic within the operations area, would be graded and compacted for positive drainage.

Revegetation with grassland species, herbaceous species, and trees would bind the soil particles together and break up the erosion energy of raindrops. Temporary erosion control measures to be implemented in conjunction with revegetation efforts include the use of coir wattles strategically placed on the fill slopes every 20 vertical feet. Stockpiles at the processing plant would be managed for wind and erosion to control erosion and sediments that may contribute to silt build-up in the sediment basin. Temporary erosion control measures would be used on the stockpiles during the rainy season. For example, stormwater would be diverted away from stockpiles into drainage ditches that collect stormwater from the stockpiles and direct the flow into one of the sediment basins and pits. In addition, coir wattles or silt fences would be installed at the base of stockpiles if there is evidence of erosion. Topsoil stockpiles that would not be used in the near-term would be hydroseeded.

Dust control would be achieved by regular watering in the processing plant and mining areas and on unpaved roads. In the mining areas, there would be regular watering of cut slopes by the water trucks. Open working areas in any given pit in any phase would be limited to the smallest area necessary for mining, with topsoil and grass left in place in the areas to be mined in the future. As described in Section 2.6, below, after mining is complete in each phase, the area would be reclaimed and revegetated.

2.4.5 Operational Schedule, Employees, and Utilities

Operational Workforce

Sargent Ranch Quarry would have up to 15 employees on-site at any one time for surface mining activities. In general, up to five staff would run the processing plant, three would load trucks with front-end loaders, three would conduct active mining operations, one would manage scale operations, and up to three would weigh incoming trucks and provide office support.

As shown in Table 2-3, reclamation activities would occur for approximately five years after completion of each phase, and up to five years after completion of all mining (see Section 2.6). Initially, reclamation of each phase would involve grading that would be conducted by the 15 Project employees. Similarly, removal of Project facilities, such as the processing plant, would be done by those Project employees. Other reclamation activities, such as hydroseeding, tree planting and monitoring, would be done by consultants under contract to the Applicant. Hydroseeding is estimated to employ approximately two employees or contractors for four days for each phase. Tree planting would employ approximately two employees or contractors for 21 days. Monitoring would be an intermittent activity occurring over the 5-year periods and would require approximately two consultants for up to two days per year.

Hours and Days of Operation

Mining operations are proposed to occur year-round. The level of activity at the quarry would be highest during the active mining season, between April and October, and lowest during the rainy season. The quarry would operate a maximum of 310 days per year. Generally, mining activities would not occur on any day with one-half-inch (0.5”) of rain or more to preserve quarry equipment and to maintain safe operations for employees.

All Project operations would occur Monday through Saturday between 6:00 a.m. and 5:00 p.m., with two exceptions. Mining and activities at the processing plant would occur between 6:00 a.m. and 5:00 p.m. with one (1) hour for breaks (for a 10-hour workday). Sales transported by truck could begin as early as 4:30 a.m. each day, continuing until 4:00 p.m. Pick up of loaded rail cars would be scheduled to occur at night up to three times per week between Monday and Saturday. These operational hours are not consistent with the County standards and so would require separate Planning Commission approval (see Section 2.7, *Approvals, Permits, and Consultation*). The quarry operation would be closed on Sundays and holidays consistent with County Code Section 4.10.370 Part II A.1. Maintenance of equipment may be conducted on any day of the week. Reclamation activities would occur within these same operating hours.

2.4.6 Utilities

The Project would be served by Silicon Valley Clean Energy (SVCE) use existing electric power and telephone lines during initial site construction, mining operations, and reclamation. Electricity would be the source of power for the aggregate processing plant, offices and other facilities. No natural gas would be used, and no extensions of public utilities or alterations to existing utility service would be necessary to implement the Project.

Septic System and Wastewater

An on-site septic system (also known as an on-site wastewater treatment system, or OWTS) would be installed, consisting of a septic tank, distribution box, and leach field, which would be constructed for Project use. The leach field would be located as near to the processing plant area as feasible in order to service wastewater generated by toilets and sinks in the processing plant office, as well as one additional restroom facility in the processing plant area. (See Figure 2-5) The septic system would be designed for a daily wastewater generation of 400 gallons per day based on the Uniform Plumbing Code estimated wastewater generation of 25 gallons per day per employee. Division B11, Chapter IV, of the County Ordinance Code establishes regulations for the approval, installation, and operation of OWTS within unincorporated Santa Clara County, consistent with the Central Coast Regional Water Quality Control Board (RWQCB) standards and water quality plans; the Project's OWTS would be installed and operated in compliance with these requirements. Portable toilets would be used at the processing plant during initial site construction activities until installation of the septic system is completed. Portable toilets would also be used in the mining areas. The portable toilets are expected to be serviced weekly at the same time as the portable toilet that currently serves the oil extraction operation, which is located within Sargent Ranch (outside of the Project site).

Water Supply and Use

Water for dust control, aggregate processing, and other non-potable plant operations would be obtained from a new on-site well to be located near the processing plant site (as shown in the upper right-hand corner of the processing plant on Figure 2-5). This well would be installed during Project construction, and would supplement an existing on-site well. During full operations (i.e., after the initial 5 years of mining), aggregate processing would require water throughput of approximately 800 gallons per minute (384,000 gallons per day). Approximately 80 percent of the water used would be reused as part of plant operations. Water for sand and gravel washing would be pumped from the proposed well to the processing plant. The mined aggregate material would pass through a series of wet screens that are sprayed with the well water. Water and sediment would drain out of the screens and be pumped into the process water pond, which would be used to retain water. After sediment settles to the bottom of the pond, the clarified water on the pond surface would be pumped back to the plant for reuse in aggregate washing and for dust control at the processing plant, along roads, and within mining areas.

Potable water would be brought in by private vendors and used for drinking water and other uses as required by building code and the potable water requirements of the Department of Environmental Health. Water deliveries are expected to occur once a week.

As shown in **Table 2-5**, the maximum daily and annual water consumption rates during peak production, would be 86,135 and 26,742,000 gallons, respectively. This includes refilling of a 10,000-gallon fire response water tank four times per year. The total annual water demand in a peak production year would equate to approximately 82 acre-feet per year. This is the amount of water that would be pumped from the groundwater well and does not include the reused water described above. As shown in Table 2-5, reclamation activities would require approximately 155,000 gallons per year, and another 465,000 gallons per year would be used for dust control in reclamation areas. All irrigation would be turned off two years after all reclamation actions are completed.

TABLE 2-5
WATER CONSUMPTION BY PROJECT COMPONENT

Project Component	Annual Consumption in Peak Production Year (gal)	Maximum Daily Demand (gal)
Aggregate Processing	23,808,000	76,800[a]
Processing Plant Dust Suppression	155,000	500
Access Roads and Maintenance Road Dust Suppression	930,000	3,000
Mining Area Dust Suppression	930,000	3,000
Reclamation Area Dust Suppression	465,000	1,500
Reclamation Areas Irrigation	155,000	500
Landscaping Irrigation	155,000	500
Indoor Use	104,000	335
Water Tank for Fire Response	40,000	n/a
Total	**26,742,000**	**86,135**

NOTES:

a. This assumes that 80 percent (307,200 gal/day) of the total aggregate processing water (384,000 gal/day) would be reused for plant operations, and therefore only 20 percent (76,800 gal/day) would be consumed. A maximum of 6,000 tons per day would be processed. A maximum of 1,512,800 tons of aggregate would be exported in a single year.

b. The 10,000-gallon water tank would be refilled four times per year. If a fire does occur, there could be some additional water use, but it would be intermittent and temporary.

SOURCE: Freeman, 2021.

Additional water would be used for dust control during construction, although this would be a temporary use and would not exceed 100,000 gallons in the 9-month construction period.

The groundwater well would be constructed consistent with Santa Clara Valley Water District (Valley Water) Ordinance 90-1, which requires that well construction comply with Valley Water and California Department of Water Resources Bulletin 74-81 standards. These standards address annular seal depths and thicknesses, acceptable sealing materials, and placement of sealing materials, as well as the required distance from contaminant sources. County Department of Environmental Health approval would be required for all water supply wells. See Section 2.7, *Approvals, Permits, and Consultation*. The groundwater well would be closed during final reclamation and after removal of the irrigation system.

Solid Waste

Because no demolition would occur at the site, most construction waste would be packaging from delivery of Project components and building materials (e.g., plastic wrap, pallets) and ranch-related items (e.g., barbed wire) found on-site. During the mining and product processing operation, the 15 employees would generate small amounts of waste, as typical of a business operation. Solid waste would be hauled off weekly by a local waste disposal company. Receptacles for garbage and recycling would be located at the processing plant.

After mining is completed, reclamation would include the dismantling and disposal of Project facilities and equipment. Most of these components would be salvaged, for example by being repurposed for ranch use or resold to other parties. For example, the conveyor belts used to haul materials from the mining pits would be sold and taken off-site for reuse.

2.4.7 On-Site Hazardous Material Use and Storage

Fuels and oils for mobile equipment would be used and stored on-site during both the active mining and reclamation periods. These petroleum hydrocarbon materials would be stored in aboveground tanks with fuel delivered on an as-needed basis. Other materials including new oil and waste oil, antifreeze, and hydraulic fluids would be stored in aboveground storage tanks (ASTs) and smaller containers at defined storage sites within the processing plant area that are located to the south of the processing plant parking lot.

Storage and handling of hazardous materials would comply with federal, state, and local requirements for minimizing inadvertent contamination of groundwater and accidental spillage into open water bodies. The Project would include preparation of a Hazardous Materials Business Plan (HMBP), consistent with state and County regulatory requirements. A proposed Industrial SWPPP consistent with federal and state regulatory requirements already has been prepared (Appendix I). Both would be implemented at the Project site to minimize the potential for spills and leaks from material handling and storage and to minimize exposure of significant materials to stormwater. These procedures include installing secondary containment or using double-walled ASTs, conducting regular inspections, and training employees.

In addition, oil and chemical vendors and operators of equipment would be trained and instructed to comply with applicable speed limits and to exercise caution when driving near ASTs and associated equipment. Drivers would be instructed to respond to an emergency by shutting off the pump or closing the emergency shutoff valve at the delivery truck product compartment. A spill containment kit would be located on employee vehicles and rail cars arriving at the site. In the event that a spill occurs, absorbent material would be used to prevent chemicals or oils from leaving the area. For larger spills, the on-site earthmoving equipment would be used to create a berm to contain the spill so that it can be cleaned up consistent with regulatory requirements.

During weekly safety meetings that would begin with the commencement of on-site activities and continue until the conclusion of final reclamation, workers and relevant vendors would receive training in the safe handling of fuels and oils.

2.4.8 Lighting

Mining would occur during the day; therefore, no lighting is proposed in the quarry pit areas or along the conveyor belts. Lighting would be installed at the processing plant in accordance with Mine Safety and Health Administration (MSHA) regulations and County Guidelines for ASA (30 CFR Parts 1-199; Santa Clara County 2020b). Lighting also would be provided at the rail loading area.

Lights at the processing plant may be on in the early morning and later afternoon hours (i.e., when the plant opens for sales at 4:30 a.m. until dawn and from dusk until closing at 5:00 p.m. during the summer and early evening in the winter). Lights at the rail loading area would be used only when rail cars are being connected to the train for transport and when empty cars are returned to the Project site.

Light fixtures would be a maximum of 12 feet tall and would be located throughout the processing plant as needed for safety and security purposes. Lights along the rail line would be located where the spur connects to the main line, and approximately every 20 feet along the spur. Lighting would be shielded to prevent light overspill onto neighboring properties and to reduce impacts on nighttime views from U.S. 101. Festooned, naked-bulb, or flashing bulb lighting would not be allowed per County ASA guidelines.

2.4.9 Routine Maintenance Procedures

Ongoing maintenance would include routine removal of debris from benches, removal of accumulated sediment from drainage ditches and basins, and regrading of the haul roads. A loader, or dozer would be used to remove debris from the benches if the debris impairs drainage on the bench and if removal of the debris would not affect the revegetation program on the benches. If necessary to remove the debris without affecting the revegetation program, then the debris would be removed by hand. A backhoe or an excavator would be used to clean out drainage ditches and basins annually before winter rains, and when it is observed that a ditch is impacted by accumulated debris. A road grader would be used to smooth unpaved access roads. Spilled rock or soil would be cleaned up by hand or by using a loader. Minor or emergency (non-routine) maintenance or repairs also would be conducted at the quarry as needed.

2.4.10 Fire Suppression

The Sargent Ranch Quarry Project Fire Protection Plan (FPP) (Appendix L) identifies and evaluates fire risk associated with the Project's activities and identifies requirements for risk reduction features such as water supply, fuel modification, defensible space, emergency access, building ignition and fire resistance, fire protection systems, red flag warning protocols, safety requirements for hot work, and wildfire emergency preplanning. The FPP includes a summary of the existing fire risk on-site and considers the Project site's climate, on-site topography and vegetation, and fire history. The FPP uses the "BehavePlus Fire Modeling" analysis to predict fire behavior on-site and conducts a fire risk assessment that considers the potential for the Project to impact fire risk and fire protection services in the area (Dudek 2020). The Project would implement the following recommendations:

- Maintaining a Fuel Modification Zone (FMZ) of 100 feet around each building and structure in the processing plant area.
- Maintaining a 20-foot FMZ on each side of access roads.
- Maintaining a 10-foot FMZ in all directions from the water tank.

- Clearing parking areas and fuel or storage areas of grass and brush for a distance of at least 30 feet.
- Completing fuel modification vegetation management by May 15 of each year.
- Obtaining an inspection and report by a County-authorized Wildland Fire Safety Inspector by June 1st of each year.
- Providing a 10,000-gallon water tank (described in Section 2.4.2) dedicated to firefighting purposes. The water tank would be moved to each phase when mining commences at that phase.
- Providing a 4,000-gallon water truck for fire suppression (included in Table 2-4).

Fuel modification would include removal of all existing native vegetation and prohibited plants (see Appendix E of the FPP), which would be replaced with drought tolerant native species (see Appendix D of the FPP), maintained at a height of 6 inches or less. Fuel modification maintenance work would include mowing, trimming, managed goat grazing, and/or similar methods to reduce the height of vegetation in the FMZs.

The two water trucks used for dust control would be available to assist with fire suppression as needed. Also, fire prevention training for all quarry personnel would be a regular part of the weekly safety training for all employees of the quarry.

2.5 Construction Activities and Assumptions

The analysis in this EIR assumes that Project construction would begin in March 2023 and be completed by December 2023. The actual start date would depend on status of Project approvals. During this 9-month construction period, the following Project components would be constructed: the screening berm, the aggregate processing plant and associated facilities, access road improvements, and drainage facilities. All construction activities would take place between 7:00 a.m. and 5:00 p.m., Monday through Saturday, consistent with the County Code Section B11-154(b)(6).

The projected durations for construction of each Project component are shown in **Table 2-6**. The equipment likely to be used also is identified. Each component would be constructed sequentially, with the exception of the Monterey Road Improvements and Northbound 101 Acceleration Lane improvements, which would be constructed at the same time.

The number of employees would vary depending on the facilities being constructed. Construction of the processing plant and road improvements would require 15 employees. Bridge construction would include 10 employees, and eight employees would be involved in construction of the rail spur. The above construction activities would occur in sequence, so there would not be any overlap, with the exception of improvements to Old Monterey Road and Highway 101, which could overlap. Up to 30 construction employees could be on-site during these road improvements.

In addition to the above initial construction activities, at the end of Phase 2 mining (estimated to occur in 2047), a new conveyor belt and maintenance road (including the proposed Sargent Creek crossing) would be graded from the Phase 3 and Phase 4 mining areas north to the plant site as described in Section 2.4.1.

TABLE 2-6
CONSTRUCTION EQUIPMENT AND DURATIONS BY PROJECT COMPONENT

Project Component	Equipment Types		Duration
Project Construction (2023)			
Processing plant (including Phases 1&2 conveyor belt, access road)	1 crane 1 blade 1 bulldozer	1 scraper 1 excavator 1 trenching machine	4 weeks
Free-span bridge over Tar Creek	1 excavator 1 bulldozer 1 crane		3 weeks
Monterey Road Improvements	1 bulldozer 1 blade 1 paving machine	2 rollers 1 water truck	3 weeks
Northbound 101 Acceleration Lane	1 bulldozer 1 blade 1 paving machine	2 rollers 1 water truck	2 weeks
Rail spur	1 crane 1 blade		3 weeks
Screening Berm	2 bulldozers 1 excavator		4 weeks
Maintain Old Monterey Road	1 paving machine 2 rollers 1 oil truck		Ongoing (every 5 years)
Phases 3 and 4 Construction (2047)			
Conveyor Belt/Access road	1 bulldozer 1 blade	1 scraper 1 trenching machine	3 months

SOURCE: Freeman, 2021.

2.6 Reclamation

The Applicant has prepared a draft Reclamation Plan for the Project (Appendix B). The proposed reclamation generally involves equipment and building removal, regrading, re-soiling, drainage and erosion control, and revegetation. Some of these activities may occur simultaneously but the general sequence of reclamation would be as set forth below so that the most exposed created slopes are revegetated first. Upon completion of all reclamation activities, the Project site would be returned to cattle grazing and/or be retained as open space.

1. Whenever a finished slope is completed within each mining phase, contour grading and re-soiling would commence on that slope. Hydroseeding would be done and an irrigation system would be installed if required, and the area would be revegetated.
2. Once mining is complete in a phase, the slopes would be filled and regraded to 3:1. Hydroseeding and irrigation (if required) would be installed.

3. Seeding and planting of oak trees would begin on the uppermost benches and slopes, working down toward lower elevations.
4. Once mining is complete in Phase 4, the mining equipment would be removed.
5. Final reclamation (after Phase 4 is complete) would include using remaining stockpiles to fill, compact, and re-soil the pit and process water basin; contour and grade unnecessary internal roads; rip, disk, and re-soil the quarry floor; and re-soil the reclamation slopes and benches.
6. Implementation of inspection and monitoring programs.
7. Implementation of post-reclamation maintenance.

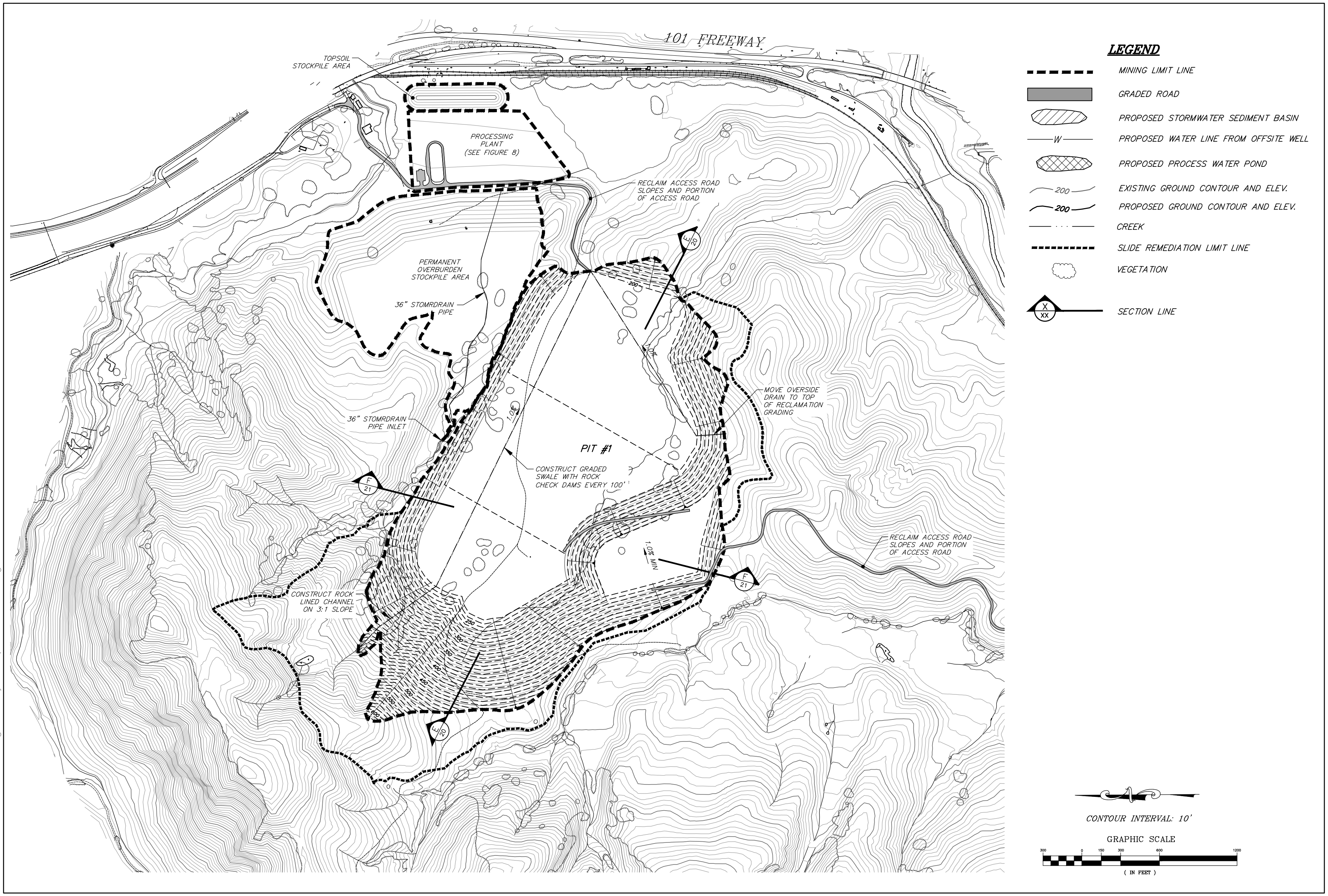
Specific reclamation activities are described in more detail below.

2.6.1 Building, Structure, and Road Removal

Quarry equipment, structures associated with the processing plant, storage yard debris, the scale, the rail spur and excavation and loading vehicles used during mining operations would be removed when the mining operation ceases. Removal of equipment and structures would take up to two months. Some of the equipment (e.g., modular office space and scale) would be used as part of post-mining uses such as cattle grazing. At the end of Phase 4 mining operations, the conveyor belt would be removed, and its footprint regraded and revegetated. The Tar Creek bridge and the access road that runs parallel to the conveyor belt would be left in place to continue to provide access to the Phase 3 and Phase 4 areas during reclamation, and ultimately to be used for cattle operations. After reclamation of the Phase 3 and Phase 4 areas has been completed, the Sargent Creek crossing would be removed, and the area disturbed for the maintenance road would be either revegetated or maintained for use for cattle operations. After the removal of the Sargent Creek crossing Sargent Creek would be restored to its pre-Project condition. The water well would be retained for the duration of reclamation activities as a source of water for irrigation of plantings and thereafter for future grazing uses. The removal of structures, equipment, and vehicles would include the removal of contaminants and hazardous chemicals such as oils and lubricants from the site. After removal of equipment, the rock plant would be disassembled for sale. Tanks and drums would be sold to recyclers or returned to the distributor. Storage yard debris would be recycled.

2.6.2 Redistribution of Materials and Recontouring

Reclamation would include the use of overburden to fill quarry pits to elevations to levels at or below the immediately surrounding grades, recontouring of the surface of mined and processing plant areas, installation of erosion and stormwater control features, redistribution of topsoil, and revegetation. The site topography would ultimately be contoured to create a safe condition for cattle grazing, which is intended to be resumed at the site upon completion of reclamation activities. Slopes would be a maximum of 3:1. Finished site contours for each phase of mining are shown in **Figure 2-18**, *Reclamation Plan – Phases 1 and 2*, **Figure 2-19**, *Reclamation Plan – Phases 3 and 4*, and **Figure 2-20**, *Processing Plant Site Remediation Plan*. Cross sections for each phase are shown in **Figure 2-21a** and **Figure 2-21b**, *Mine Reclamation Cross Sections*.



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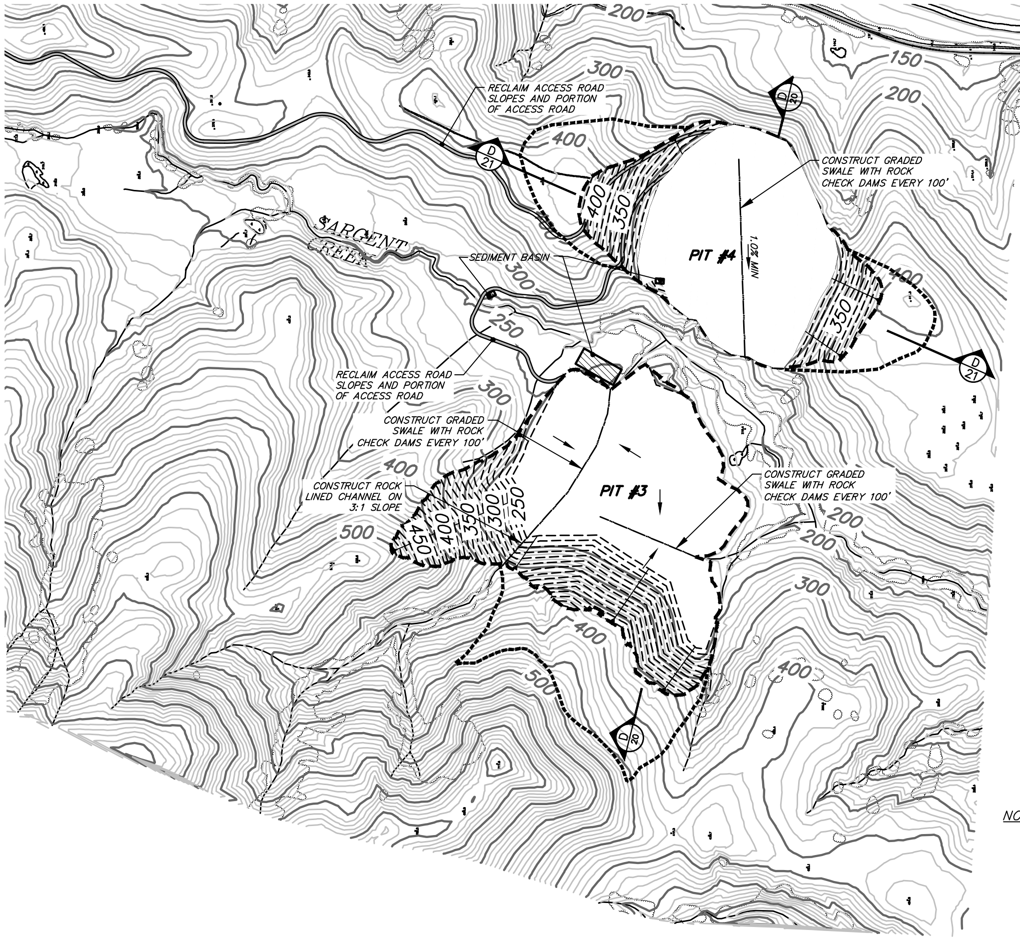
SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-18
Reclamation Plan - Phases 1 and 2

ESA



NOTES:
1. PHASE 4 OVERBURDEN WILL BE USED TO RECLAIM PHASE 3 AND 4 AS SHOWN HEREON.
2. PHASE 4 AND A PORTION OF PHASE 1 TOPSOIL SHALL BE SPREAD 6" MIN. ACROSS ALL OF PHASE 3 AND 4.
3. REFER TO FIGURES 20–21 FOR MINE RECLAMATION CROSS SECTIONS.
4. FOR FULL SIZE PLAN REFER TO APPENDIX G.

LEGEND
- MINING LIMIT LINE
- PROPOSED GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- SLIDE REMEDIATION LIMIT LINE
- PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- SECTION LINE
- EXISTING GROUND CONTOUR AND ELEV.
- PROPOSED GROUND CONTOUR AND ELEV.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

800 0 400 800 1600

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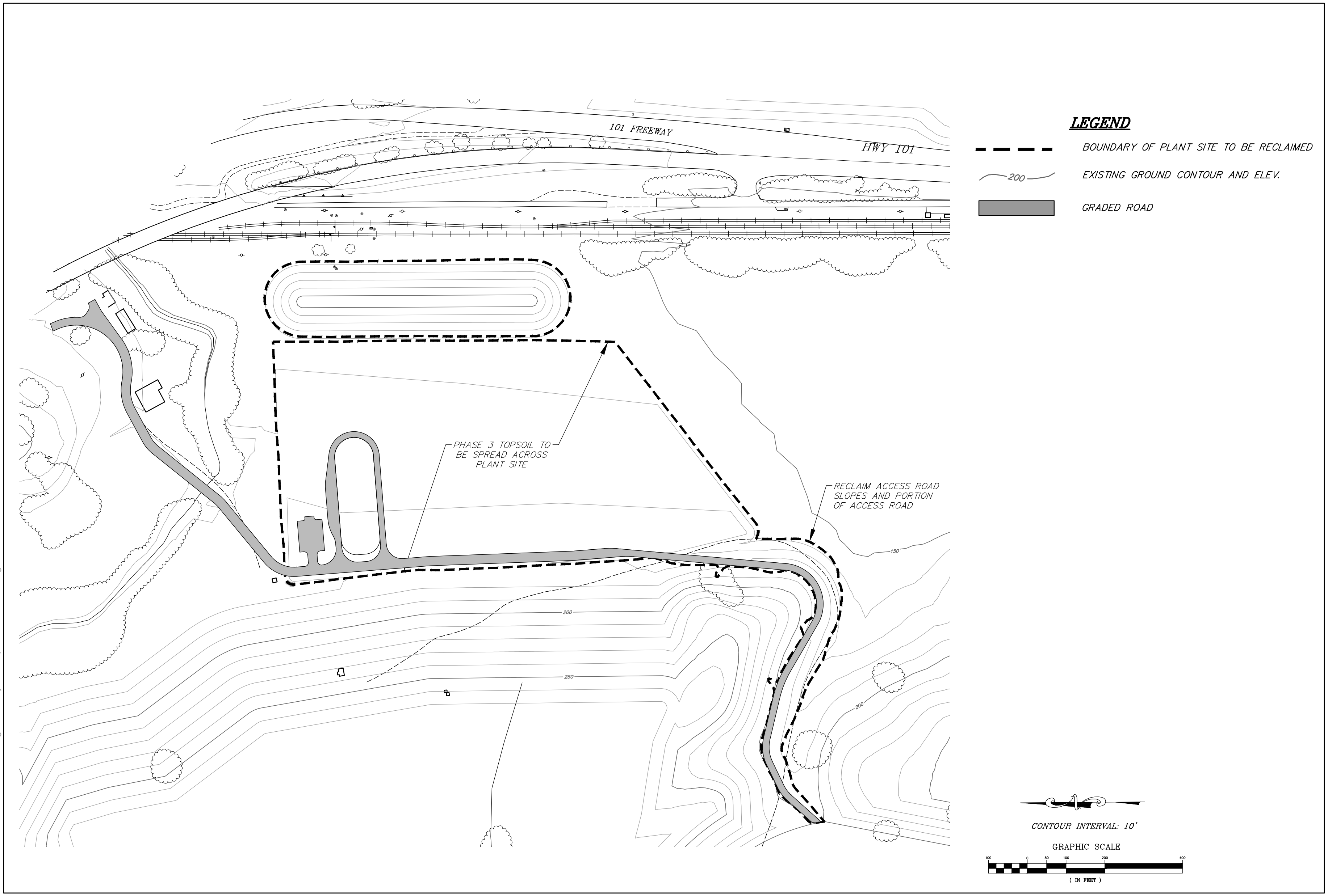
SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-19
Reclamation Plan - Phases 3 and 4

ESA



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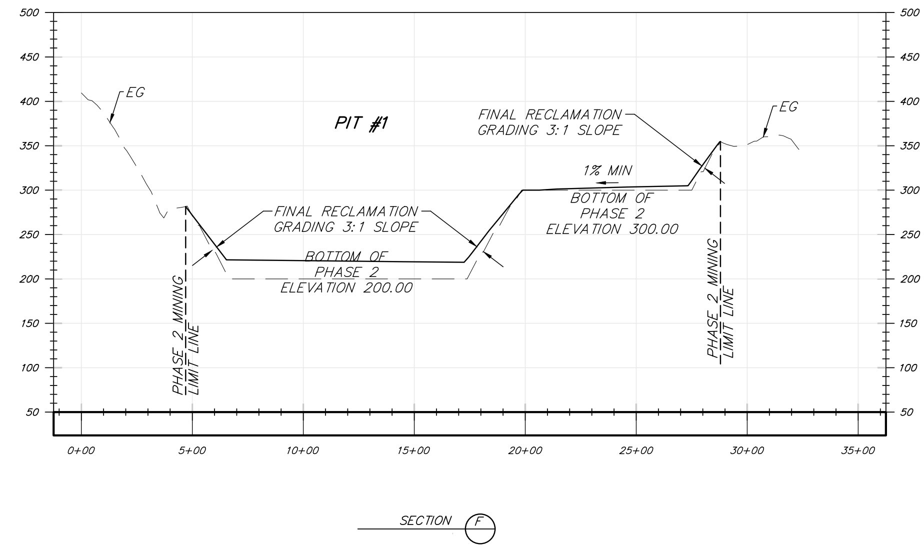
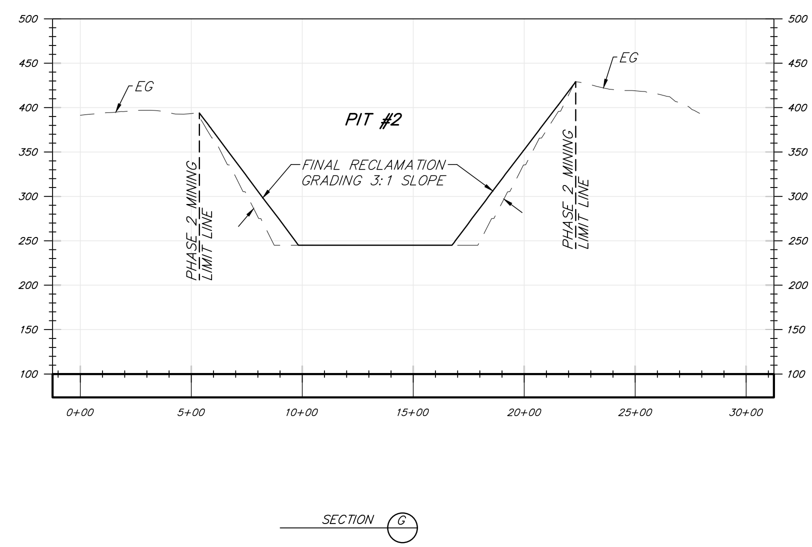
SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-20
Aggregate Plant Site Reclamation

ESA



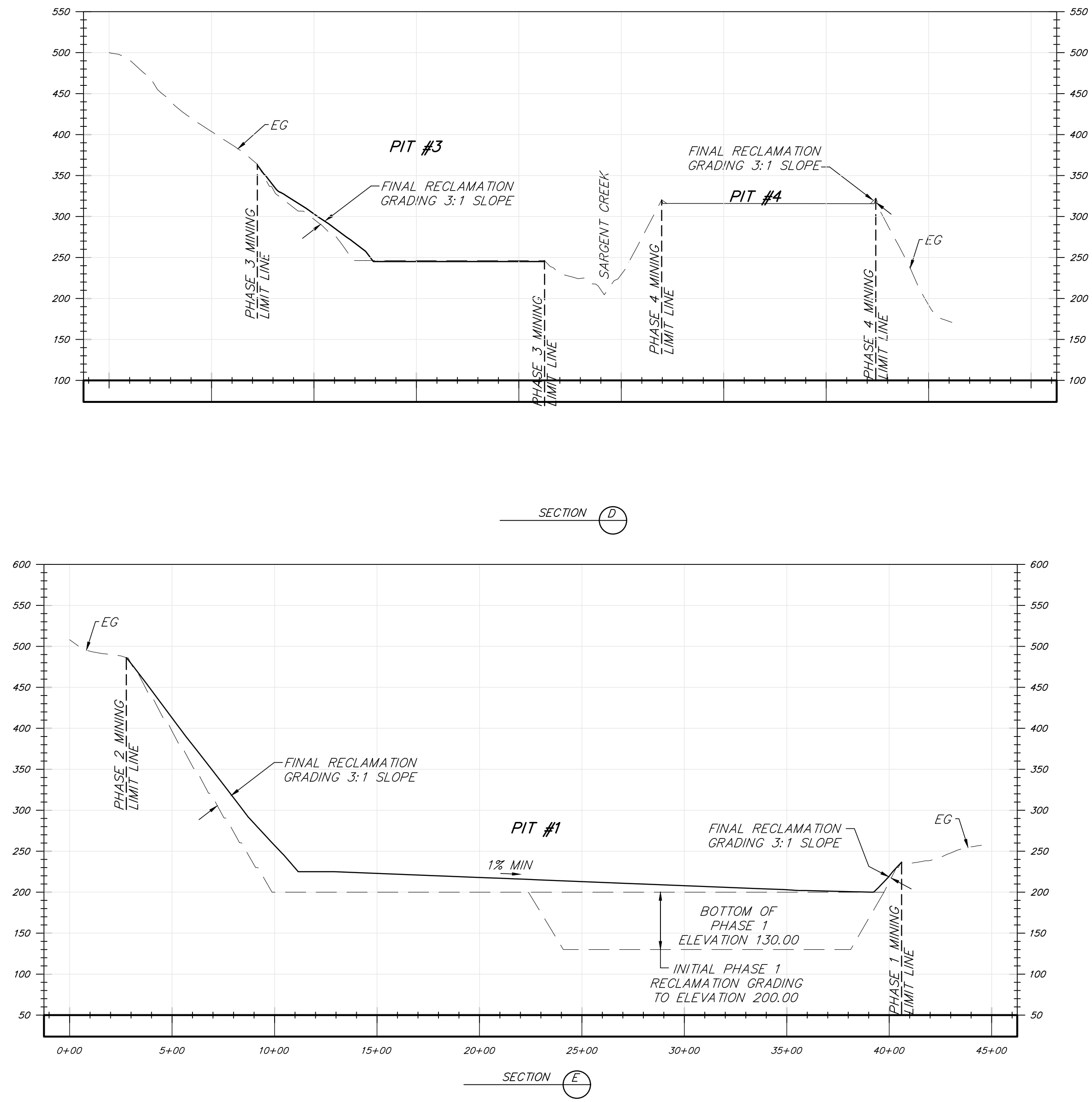


SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-21a
Mining Reclamation Cross Sections

ESA



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SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-21b
Mining Reclamation Cross Sections

ESA

Overburden would be used to fill quarry pits up to five (5) feet below the ground surface and compacted to 90 percent relative compaction. Topsoil would then be applied to the upper five (5) feet to support plant growth during revegetation. The topsoil stockpiled during mining activities would be redistributed to enhance revegetation as final surfaces and quarry slopes are completed. A water truck would be used for wetting down work areas while topsoil is being spread onto the reclaimed slopes, benches, and valley floor. The sediment basins would also be filled with the remaining soil material, contoured, and revegetated once all mining activities are complete.

The regrading and contouring of specific Project components such as the material processing area, mining areas, and roads is described in more detail below.

Once equipment and buildings have been removed in the material processing area, the process water pond would be back-filled and compacted. The processing area would be ripped to a depth of two feet in order to loosen compacted soil and regraded using the stockpiled overburden from the northwest corner to achieve a uniform finish grade. After the area has been graded, topsoil would be placed over the area and reseeded with the seed mixes identified in Tables 6 and 7 of the draft Mining and Reclamation Plan (Appendix B).

Using overburden from the stockpile area, the mining areas would be graded with side slopes of 3:1 or flatter. The final grade would be based on the volume of stockpile and overburden available. After the mining areas have been graded appropriately, the areas would be re-soiled using stockpiled topsoil and reseeded. A bulldozer would be used to spread topsoil which would be spread across the ripped quarry pit to a depth of six inches. Final grading and contouring after the completion of Phase 4 would be completed within approximately one month.

Except in the case of the conveyor belt access road, which may be left in place for use in cattle grazing, roads created for the Project would be ripped to a depth of 12 inches. Topsoil would be applied to reach a depth of eight inches and reseeded. Ranch roads established prior to mining operations would remain after the completion of mining and reclamation. These ranch roads are, on average, 25 feet wide and unpaved. The bridges constructed for the Project would be removed, with the exception of the Tar Creek bridge, which would be retained for use by the cattle operation.

2.6.3 Slope Stability

Final reclaimed slopes in mined areas would have slope gradients of 3:1 or flatter with 1- to 2-foot-wide benches at 30-foot intervals. Overburden and topsoil would be used to fill and re-soil each quarry pit, to construct reclaimed fill buttress slopes and benches, and to facilitate revegetation. Slopes would be seeded or planted with oaks and other vegetation.

As part of recontouring activities, fill would be compacted to 90 percent density up to five (5) feet below the surface and the upper 5 feet would be granular material with a layer of topsoil. The ground surface would be ripped prior to receiving the topsoil layer. Loaders would be used for transporting fill material to the basins, and bulldozers would place and compact fill. A motor grader would be used to shape the final surface area and to spread the topsoil layer as part of establishing the final site contours. Once reclamation grading is complete, these areas would be revegetated as described below.

2.6.4 Revegetation

Noxious Weed Removal During Mining and Reclamation

A biological survey conducted in 2015 found that yellow star thistle (*Centaurea solstitialis*) and Italian thistle (*Carduus pycnocephalus*) are present at the Project site (Appendix E). SMARA's implementing regulations require these two USDA-listed noxious weeds to be eradicated from the reclaimed Project site (USDA 2020). The Applicant has proposed to implement a program to manage these weeds during operations and reclamation. Weed removal would commence during each mining phase and continue annually through the 30-year mining term by hand, with herbicides, or with managed grazing. As part of reclamation activities, annual inspections of the quarry would identify the presence of the two species. The findings of these inspections would be recorded on the Annual Noxious Weed Control Inspection form, which would be submitted to the County for review. Weed removal would continue until the end of the post-mining 5-year maintenance period or when the planting success criteria identified in Table 2-6 have been achieved, whichever occurs last.

Planting Methods and Plant Selection

Test Plots and Monitoring Plots

Revegetation test plots and monitoring plots would be set up at the beginning of Phase 1 mining activities and would be located near the processing plant in an area that would not be disturbed by mining activities. This section summarizes success criteria for each. For additional details, see Section 4.4.12 of Appendix B.

Test plots would be used to determine the water and soil amendment needs for the revegetation program for the proposed California native and naturalized[8] grassland and oak woodland communities that would be planted at the site as part of overall site reclamation. The test plots would be used to refine the planting palette and methods, as needed, to ensure that the revegetation program is successful.

Test plots are intended meet the following criteria:

1. Allow evaluation of the different plant palettes presented on Tables 5 to 7 of the Mining and Reclamation Plan (Appendix B)
2. Plot sizes should be sufficiently large to be able to quantify success criteria
3. Test plots should experience no disturbance for a minimum of 5 years after establishment
4. Soil materials with topsoil should be comprised of the same materials that would be used during future reclamation (stockpiled topsoil, weathered materials or fines from processing and overburden, and soil testing to support native plants)

8 Naturalized plants are non-native plant species growing beyond their natural range or natural zone of potential dispersal, including domesticated and feral species and hybrids involving at least one non-native parent species. Other terms that are often used as synonyms for non-native include alien, exotic, introduced, adventive, non-indigenous, non-aboriginal, and naturalized. https://www.cal-ipc.org/resources/library/publications/ipcw/cwip/.

5. Fill placement and planting preparation should follow guidelines for future reclamation presented in the Reclamation Plan.

The monitoring plots would be installed when mining is completed at the end of each mining phase and after reclamation grading and when revegetation begins. The monitoring plots would measure 2 feet by 50 feet in the grassland habitats. The monitoring plots for the oak woodlands would be 2 feet by 100 feet and the area used to measure oak tree density would be a 100-foot-diameter circular plot. The monitoring plots would be used to evaluate the success of the revegetation planting and ensure that the vegetative success criteria required by SMARA are achieved. Monitoring plots are intended to meet the following criteria:

1. Locations of monitoring plots should represent significant microclimates in terms of slope, aspect, and elevation.
2. Plot sizes should be sufficiently large to quantify success criteria.

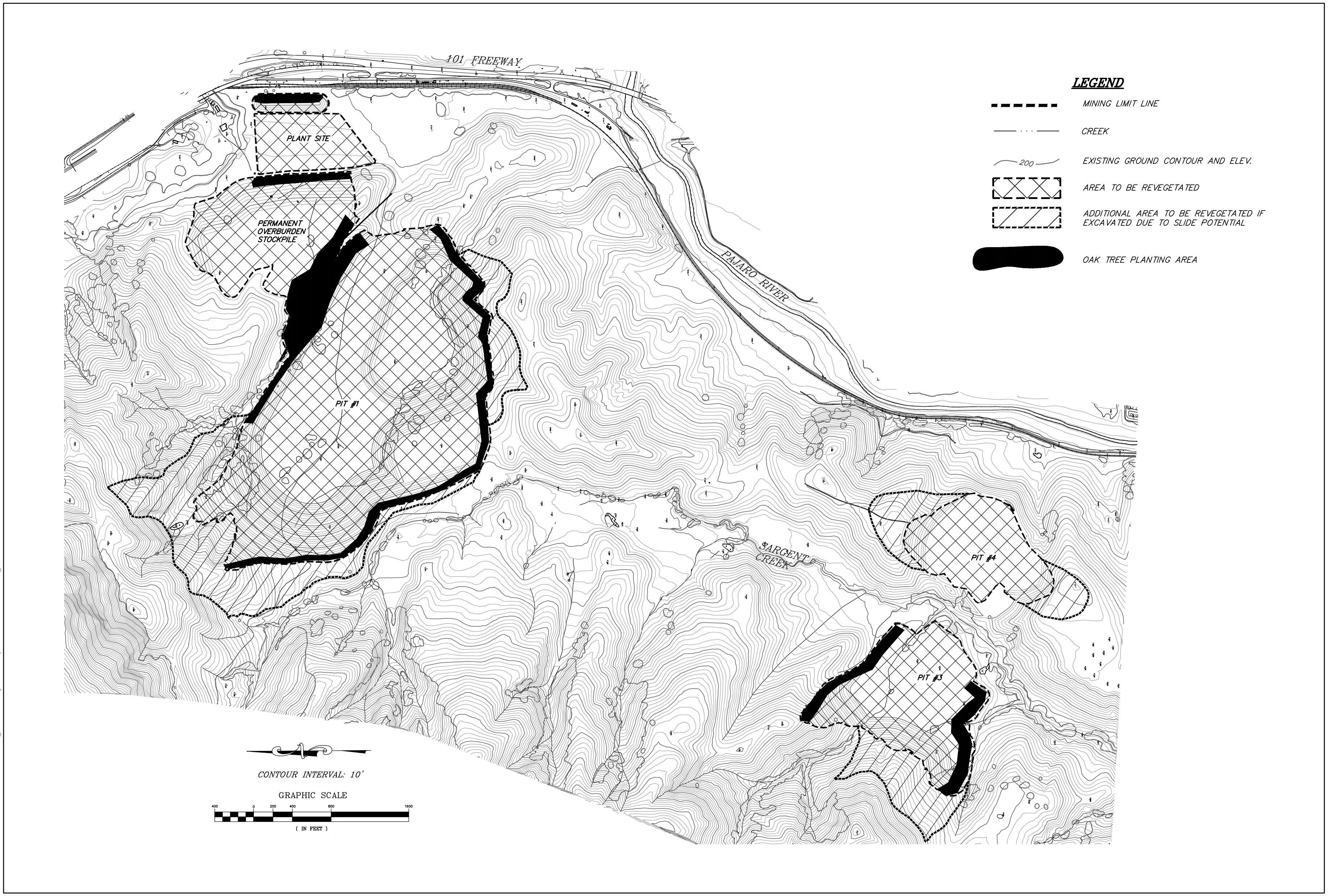
Revegetation

Revegetation would include hydroseeding of slopes that have a gradient of 3:1 or flatter by drilling or imprinting seeds on flatter slopes and benches, and by planting oak tree masses in designated locations to integrate the reclaimed area with the surrounding undisturbed lands. Soil supplements and irrigation to revegetated areas would be provided if the test plot planting program determines that they would improve survival of the plantings. **Figure 2-22**, *Revegetation Plan*, shows where revegetation would occur.

Species to be planted would consist of native and naturalized plant species that have a record of success on disturbed soils and are consistent with vegetation present generally in the area. Baseline data for oak tree density and plant species present on the site was collected and used to create a target oak density and planting palette. The findings from the test plots would be used to modify the planting program described below, as needed.

An irrigation system would be installed to assist in the revegetation effort if the test plot monitoring program determines that supplemental water improves the growth and survival rate of the oak tree seedlings. If an irrigation system is needed, then the woody plants would be hand watered with a hose on a water truck for the first two years and then irrigated for the third year to facilitate plant establishment. Plant irrigation would be discontinued at the end of the third year or continued for an additional two years if replacement plants are installed due to losses of the initial plants. The objective is to meet the planting success criteria without ongoing irrigation. As shown in Table 2-5, an estimated 155,000 gallons per year would be used for irrigation of reclaimed areas. After reclamation and monitoring are completed, the irrigation system would be removed.

Four different seed mixes would be used to replicate the different existing site conditions found at the quarry and the surrounding landscape, including native/naturalized grasslands on the flat valley areas and lower and upper slopes and oak woodland with annual grassland around the mid-elevation slopes. Native and naturalized plants that are more commonly found within these plant communities at the site would be replanted in the same general area. Species to be planted would consist of commercially available erosion-control native and naturalized plant species that have



SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

SOURCE: Freeman Associates, February 2022

SCC Sargent Quarry

Figure 2-22
Revegetation Plan.pdf

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evidenced good success on disturbed soils and are consistent with vegetation used in the region. By proposing to revegetate with the same or similar plants that are growing in the area, the Applicant intends for revegetated slopes to be visually compatible with the native landscape.

Oak trees would be planted at a density of approximately 20 per acre in identified oak tree planting zones and would include coast live oak (*Quercus agrifolia*) and blue oak (*Quercus douglasii*). Trees would be grown on-site or acquired from local commercial nurseries, and 1-gallon and tub-stock-sized oaks would be planted between October and February. Planting holes would be dug; the irrigation, if needed, would be installed; and a marker stake would be posted in each planting hole before seeding. Trees would be planted randomly and in clusters to mirror the oak tree massing on surrounding hillsides in the oak tree planting areas (see Figure 2-22).

2.6.5 Drainage, Erosion, and Sediment Controls

During reclamation, a water truck would be used for wetting down work areas during ground disturbing reclamation activities. Drainage ditches would be lined with rock to reduce soil erosion. During reclamation interceptor ditches would be installed at the back of reclamation benches which would flow into either 1) drop inlets that drain into override drains that discharge onto energy dissipaters at the base of the slope or 2) either side collector ditches or lined ditches with energy dissipaters at the base of the slope. From the energy dissipaters, water would either dissipate into the ground of the valley floor or would be collected in drainage ditches that flow into the basin on the floor or into the reclaimed pit. In order to accomplish this, the valley floor would be graded to provide a 1 percent slope to allow for sheet flow toward the drainage ditches and basin.

Erosion control features would be constructed as necessary during reclamation. The grade of the reclaimed mining area would be such that the majority of stormwater runoff is likely to be retained within the boundaries of the mining area. Temporary erosion control features such as silt fences, berms, coir wattles, and hay bales may be used where necessary, depending on the location of the grading work.

Due to the ongoing grading required in mining and reclamation, sediment basins would serve as the primary sediment control measures. In the event of continual, uncontrolled soil erosion, a seed/spraying technique may be used to create vegetation for erosion control. These erosion, drainage, and siltation measures would aid in protecting downstream surface waters during reclamation.

2.6.6 Reclamation Monitoring, and Maintenance

The Applicant would monitor reclamation activities independent of the County's annual SMARA inspections to determine the effectiveness of the revegetation activities compared to benchmarks established in the Reclamation Plan (Appendix B). The monitoring program incorporates site-specific criteria to measure compliance. Criteria are grouped into five categories: grading/topography, sediment and erosion control, revegetation, irrigation, and ongoing maintenance. See Section 4.6 of Appendix B for more detail on each of these elements.

Final Topography

Reclamation would be considered complete and satisfactory when the site configuration matches the slope and topography depicted in the Reclamation Grading and Drainage Plans and the Reclamation Cross-Sections. These requires that slopes have a varying gradient of 3:1 or flatter and have 3-foot-wide benches established at 40-foot intervals. Reclamation benches would be sloped at a minimum of 4 percent to the rear and a minimum of two percent laterally for drainage. As described above, fill placed into pits, process water pond, and on the fill earth buttresses would be compacted up to five (5) feet below the ground surface to at least a 90 percent density. The top five (5) feet would be filled with predominantly granular material. Reclamation standards require that test results demonstrate that compaction limits have been met.

Erosion Sediment and Control

The final reclamation slopes, benches, and valley floor would be revegetated to stabilize the ground surface. Jute matting, erosion control blankets, coir wattles, silt fences, and sediment traps would be used to mitigate areas where runoff is concentrated to reduce sediment levels. Rill erosion would be repaired whenever rills are found. Remaining sediment basins would be inspected annually for five (5) years after mining ceases or two years after plant recovery has achieved the success criteria outlined in the Reclamation Plan (consistent with standard SMARA requirements), whichever occurs later. Accumulated sediment in the drainage facilities would be removed prior to the rainy season each year. Erosion controls would be used and inspected each fall before the rainy season until the vegetative cover has become established and reclaimed slopes are stable. Erosion sediment and dust control would be considered to be satisfactory when the revegetation criteria have been met.

Sediment basins in the processing plant area and at the mining pits that are to be retained following the completion of mining would be inspected annually while the operator is maintaining the site. Inspections would occur each year for five (5) years after mining ceases or two years after reclamation planting and after the planting success criteria have been met, whichever is later.

The final reclaimed fill benches and slopes, quarry floor, drainage facilities, and plantings (which provide erosion and sediment control) would be inspected prior to October 1 each year of the 5-year post-mining reclamation maintenance and monitoring period. Maintenance and repair work each year would be completed prior to November 1.

Revegetation Monitoring

At the end of mining and reclamation of the Phase 4 mining area, the quarry operator would continue to maintain all of the reclaimed areas for either a 5-year period after mining ceases or a 2-year period after the last human involvement with plantings, and until the planting success criteria are satisfied - whichever occurs last. Should Phases 1, 2, and 3 achieve the vegetative success criteria while Phase 4 is still being mined or reclaimed, the operator may ask the County and the State to approve these areas as reclaimed. After completion of the quarry operator's monitoring period (post-mining), ongoing maintenance would be the responsibility of the Applicant. Monitoring Plots, after the initial 5-year period, would continue to be inspected every third year between April and May until they achieve the vegetative success criteria. Maintenance and repair work would be completed prior to November 1.

The revegetation success criteria include assessments of coverage, density, and species richness. Revegetation performance would be measured by a qualified biologist as described in the approved Reclamation Plan. Planting, maintenance, and monitoring work would be directed toward achieving the following minimum success criteria by the end of the first 5 years after each phase area is reclaimed. The planting success criteria that would be used to evaluate the post-reclamation revegetation program are summarized in **Table 2-7**.

TABLE 2-7
POST-RECLAMATION PLANTING SUCCESS CRITERIA

Location	Plant Coverage (percent)	Plant Density (per transect)	Species Richness (per transect)
Grassland – 3:1 or flatter fill slopes	60[a]	5[b]	2[1c]
Grassland – quarry floor	70[d]	4[e]	3[f]
Oak Woodland with Grasslands – 3:1 or flatter fill slopes	50[g]	4h	4i
Badlands[i]– fill slopes	40[j]	4[k]	2[l]

NOTES:

a. The plant coverage of new **grassland areas on the reclaimed 3:1 fill slopes** is expected to be 60 % coverage including the native and locally-naturalized plants. Lower plant coverage is anticipated on the fill slopes due to the more difficult growing conditions.
b. The plant density of grassland areas is not a measurement used in determining planning success criteria; however, the forbs in the seed mix (4) can be counted; and any other native or locally-naturalized forbe or woody plant that volunteers can be counted.
c. The species-richness of the grassland areas on the reclaimed 3:1 fill slopes is expected to be a little less than 50% of the number of perennial plant species (3) and forbes (4) in the seed mixture; and any other native or locally-naturalized forbe and woody plant volunteers can be counted. A lower species-richness count is expected on the cut slopes due to the harsher conditions: dry rocky surfaces and lack of soil.
d. The plant coverage of the **grassland on the reclaimed quarry floor** is expected to be 70% from all native or locally naturalized plants.
e. The plant density of grassland areas is not a measurement used in determining plant success criteria; however, the forbs in the seed mix (4) can be counted; in addition to any other native or locally-naturalized forbe or woody plant. Lower plant density is anticipated due to more difficult growing conditions.
f. The species-richness of the grassland on the reclaimed quarry floor is expected to be a little less ½ of the number of perennial plant species (3) and forbes (4) in the seed mixture; and any other native or locally-naturalized forbe or woody plant that volunteers can be counted.
g. The plant coverage of the **Oak Woodland with grassland areas on fill slopes** with a gradient of 3:1 or flatter is expected to be 50 % coverage including the native & locally-naturalized plants. Lower plant coverage is anticipated on the fill slopes due to more difficult growing conditions.
h. The plant density of grassland areas is not a measurement used in determining plant success criteria; however, the plant density in the Oak Woodland with grassland on fill slopes considers the combination of the following assumptions: ½ of the tree species in the circular plot (4 out of 7): and any of the 4 forbs in the seed mix; and any other native or locally-naturalized forbe or woody plant can be counted.
i. The species-richness of the Oak Woodland with grassland areas is expected to be a little less ½ of the number of perennial plant species (3) and forbes (4) in the seed mixture, and ½ of the tree species in the planting list; and any other native or locally-naturalized forbe or woody plant that volunteers can be counted. A lower species-richness count is expected on the slopes due to the harsher conditions: dry rocky sub-surface and thin soil layer.
j. The plant coverage of new **areas on the reclaimed slopes** is expected to be less than the existing cover of 50 %. The plant coverage will include native & locally-naturalized plants. Lower plant coverage is anticipated due to the more difficult growing conditions.
k. The plant density of on the reclaimed slopes is expected to include: 2 perennial shrubs per transect (½ of the perennial shrubs in the seed mix); and any of the 4 forbes in the seed mix; and any other native or locally-naturalized forbe or woody plant volunteer can be counted.
l. The species-richness on the reclaimed slopes is expected to be a little less ½ of the number of perennial plant species in the seed mixture (5); and include any other native or locally-naturalized forbe or woody plant that volunteers. A lower species-richness count is expected on the slopes due to the harsher conditions: dry rocky sub-surface and thin soil layer.

SOURCE: Freeman Associates, Sargent Quarry Mining and Reclamation Plan, February 2022, Table 17

2.7 Approvals, Permits, and Consultation

Several federal, state, regional and local agencies that are likely to have review, permitting, or approval authority over various components or activities associated with the Project. **Table 2-8** identifies these agencies and the permits and approvals that may be required.

TABLE 2-8
APPROVALS, PERMITS, AND CONSULTATION PERMITS

Agency	Approval, Permit, and/or Consultation
Federal	
U.S. Army Corps of Engineers	• Clean Water Act Section Individual Section 404 Permit
U.S. Fish and Wildlife Service	• Federal Endangered Species Act Compliance (Section 7 Consultation)
State Office of Historic Preservation	• National Historic Preservation Act (NHPA) Section 106 Consultation
Mine Safety and Health Administration	• Notice of Commencement of Operations • Emergency, Fire, Evacuation, and Rescue Plan • Legal Identity Report • Miner Training Program • MSHA Identification Number
State	
California Office of Mine Reclamation	• Review of Reclamation Plan
State Water Resources Control Board	• Spill Prevention and Control Countermeasure Plan approval
Central Coast Regional Water Quality Control Board[a]	• General Construction Activity Stormwater Permit/Notice of Intent • General Industrial Activity Stormwater Permit • Waste Discharge Requirements • Clean Water Act Section 401 Water Quality Certification for Section 404 permit
California Department of Transportation[a]	• Standard Encroachment Permit • Transportation Permit for Oversized/Overweight Vehicles
California Department of Fish and Wildlife[a]	• Fish and Game Code Section 1600 Streambed Alteration Agreement • Fish and Game Code Section 2081(b) Incidental Take Permit or 2080.1 Consistency Determination (California Endangered Species Act)
California Occupational Safety and Health Administration	• Construction Permit
Regional	
Bay Area Air Quality Management District[a]	• Authority to Construct, Permit to Operate
Santa Clara Valley Water District[a]	• Groundwater Well Permit
Local	
County of Santa Clara Department of Planning and Development	• Use Permit • Design Review • Architecture and Site Approval • Approval of Reclamation Plan • Variance for hours of operation
County of Santa Clara Department of Environmental Health	• Hazardous Materials Business Plan • Permit for installation of temporary portable toilets • On-site wastewater treatment (septic) systems permit • Water Supply Well Approval
County of Santa Clara Department of Roads and Airports	• Hazardous materials permit • Encroachment permit for work on County roads

NOTES:
a. Responsible Agency

2.7.1 Related Environmental Review and Consultation Requirements

Endangered Species Act Section 7 requires federal agencies (e.g., the U.S. Army Corps of Engineers) to consult with the U.S. Fish and Wildlife Service (USFWS) when any action the agency carries out, funds, or authorizes may affect either a species listed as threatened or endangered under the Act, or any critical habitat designated for it. Similarly, National Historic Preservation Act Section 106 requires federal agencies to take into account the effects of their undertakings (decisions) on historic properties[9] and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. Therefore, before issuing a Section 404 permit, USACE would be required to consult with USFWS under Section 7 and with the State Historic Preservation Officer under Section 106 before issuing or authorizing a permit for the Project. For this Project, the County also would consult with the California Office of Mine Reclamation regarding review of the proposed Reclamation Plan. This EIR provides information to support these environmental reviews and consultations.

2.8 References

County of Santa Clara. 2020a. Zoning Ordinance. Updated October 2020. Available online: https://stgenpln.blob.core.windows.net/document/ZonOrd.pdf. Accessed March 23, 2021.

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United States Department of Agriculture (USDA). 2020. California State Listed Noxious Weeds. Available online: https://plants.usda.gov/java/noxious?rptType=State&statefips=06 Accessed November 3, 2020.

9 In this context, "historic properties" may include prehistoric or historic districts, sites, buildings, structures, objects, sacred sites, and traditional cultural places, that are included in, or eligible for inclusion in, the National Register of Historic Places.

CHAPTER 3
Environmental Setting, Impacts, and Mitigation Measures

3.1 Introduction

This chapter documents impacts of the Sargent Quarry Project (Project) to the following environmental subjects in their respective sections of this Chapter 3:

- 3.2 Aesthetics
- 3.3 Air Quality
- 3.4 Biological Resources
- 3.5 Cultural and Tribal Cultural Resources
- 3.6 Energy
- 3.7 Geology, Soils, and Paleontological Resources
- 3.8 Greenhouse Gas Emissions
- 3.9 Hazards and Hazardous Materials
- 3.10 Hydrology and Water Quality
- 3.11 Mineral Resources
- 3.12 Noise
- 3.13 Transportation
- 3.14 Utilities and Service Systems
- 3.15 Wildfire

The resource sections that follow this introduction summarize the relevant plans, policies, and regulations that compose the regulatory framework for the Project; describe the existing physical environmental conditions at the Project site and in the surrounding area; and disclose the Project's direct, indirect, and cumulative impacts. For impacts that would be significant, feasible mitigation measures are identified that would avoid, minimize, rectify, reduce, eliminate, or compensate for the impact to reduce, where feasible, the level of significance below established thresholds.

3.1.1 Environmental Baseline

The analysis of each issue area begins with a description of the existing physical environmental conditions in the area where the Project and its alternatives would be implemented. These existing conditions also are referred to as the "baseline" relative to which Project-caused changes are analyzed to determine whether the change is significant for purposes of the California Environmental Quality Act (CEQA) (CEQA Guidelines Sections 15125, 15126.2). Unless otherwise noted, baseline conditions for this Project are those as they existed on or about July 21, 2016, which is the date that the County of Santa Clara (County) published a Notice of Preparation announcing its intention to prepare a Draft Environmental Impact Report (EIR); unless otherwise noted, 2016 conditions reasonably represent existing conditions. Sections 3.2 through 3.15 present details of the pre-Project baseline environmental conditions to which the potential impacts of the proposed Project and all alternatives were compared.

3.1.2 Types of Impacts

This EIR considers direct, indirect, and cumulative impacts for each resource. The terms "direct impacts," "indirect impacts," and "cumulative impacts" are defined below, consistent with CEQA Guidelines Sections 15064(d) and 15355.

Project Impacts: The effect of a Project on the existing environment is considered a Project-specific impact (as opposed to a cumulative impact, discussed below). Project impacts can be either direct or indirect. Examples of direct physical changes in the environment include dust, noise, and odors generated during construction or the loss of sensitive biological habitat due to grading and excavation during Project construction or operation. An indirect physical change in the environment is not immediately related to the Project but is caused indirectly by the Project.

If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment. For example, the construction of new utility capacity may facilitate population growth in the service area due to the increased capacity, and that growth may in turn lead to an increase in air pollution. An indirect physical change is to be considered only if that change is a reasonably foreseeable consequence of the Project. A change that is speculative or unlikely to occur is not reasonably foreseeable.

Cumulative Impacts: A cumulative impact occurs when two or more individual impacts, when considered together, are considerable or which compound or increase other environmental impacts (CEQA Guidelines Section 13555). Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. The EIR approach for defining and analyzing cumulative impacts is discussed in Section 3.1.6.

3.1.3 CEQA Significance Criteria and Determinations

CEQA lead agencies rely on impact significance criteria as benchmarks to determine whether changes to the existing environment caused by a Project or an alternative would cause a significant adverse effect. CEQA defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in the environment" (Public Resources Code Section 21068), and the CEQA Guidelines further clarify that a significant impact is a substantial adverse change "in any of the physical conditions within the area affected by the Project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance" (CEQA Guidelines Section 15382).

To determine whether impacts are significant, the questions provided in CEQA Guidelines Appendix G were considered. Lead agencies generally have broad discretion to formulate significance thresholds and to draw significance conclusions based on information in the record, including the impact's setting: "For example, an activity which may not be significant in an urban area may be significant in a rural area" (CEQA Guidelines Section 15064(a)(1), (b)).

Impact conclusions reached in this Draft EIR are made based on information in the County's record, including credible science-based research, reference materials, and informed professional judgments of qualified scientists and EIR preparers. Technical studies and analyses relied upon are cited in each section of the EIR; additional Project-specific or site-specific analyses are provided in the appendices.

The categories used to designate impact significance for the purposes of this EIR are:

- **No Impact.** There would be no impact if there is no Project-caused change in the environment—for example, if the environmental resource does not occur within the Project site or the area of potential effect. For instance, there would be no impact related to tree removal if no tree removal is proposed in the Project site.
- **Less than significant.** This determination applies if a Project-caused change would result but would not exceed the applicable significance threshold.
- **Significant.** This determination applies if the Project would result in an adverse effect that meets or exceeds the applicable significance threshold. Significant impacts are further designated as follows based on the availability of feasible mitigation measures:
  - ***Less than significant with mitigation incorporated.*** This determination applies if the Project would result in an adverse effect that meets or exceeds the applicable significance threshold, but feasible mitigation is available that would eliminate any adverse impact or reduce it to a less-than-significant level.
  - ***Significant and unavoidable.*** This determination applies if the Project would result in an adverse effect that meets or exceeds the applicable significance threshold but, even with the implementation of mitigation measures to lessen the impact, if available, the residual effect would not be reduced to less-than-significant levels.

3.1.4 Mitigation Measures

3.1.4.1 General Mitigation Approach

Consistent with CEQA and CEQA Guidelines Section 15370, this EIR describes feasible mitigation measures to avoid or minimize significant adverse effects of the Project. Mitigation can include one or more actions to avoid, minimize, restore, preserve and maintain, and/or compensate for an impact by providing a substitute resource.

This EIR refers to the “Project Owner” rather than the “Applicant” in the text of mitigation measures to define the responsibilities of Sargent Ranch Partners, LLC. Project Owner is defined for purposes of implementation of the mitigation measures as Sargent Ranch Partners, LLC, its successors and assigns, and/or its contractors (such as third-party consultants).

3.1.5 Resources and Uses for which No Impact would Occur

The following resources and uses are not analyzed further in this Draft EIR because they would not be affected by the Project and there are no impacts thereto.

3.1.5.1 Agriculture and Forestry Resources

The Project site is designated as Grazing Land and small portion as Farmland of Local Importance on the California Department of Conservation’s Farmland Mapping and Monitoring Program

(FMMP) maps (2016). There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance ("Farmland") on the Project site, nor is there any land under a Williamson Act contract (Santa Clara County 2021a). The Project site is zoned as Agricultural Ranchlands (AR), but mineral extraction is conditionally allowed in the AR zone, so it would not conflict with existing zoning for agricultural use with approval of a Use Permit.

Additionally, there is no land zoned as forest or timberland on the Project site (Pub. Res. Code Sections 12220(g), 4526; Gov't Code Section 51104(g)). Therefore, the Project would have no impact on Farmland and forestry resources.

3.1.5.2 Land Use and Planning

The Project site is part of the 5,154 -acre Sargent Ranch property, which is designated Ranchlands in the County's General Plan and zoned Agricultural Ranchlands. The Project site is currently used for cattle grazing and cultivation of dry-farmed, oat hay crops for cattle feed. The portion of Sargent Ranch to the north and west of the proposed quarry site is engaged in oil production, and there are small pipelines and oil storage facilities approximately 2 miles northwest of the proposed quarry. Immediately surrounding uses are primarily agricultural.

There are no developed communities on or near the Project site. The nearest residences are single-family homes on large parcels of private land located approximately 1,600 feet east and 4,700 feet south of the Project site, and the Betabel RV park located 1,600 feet east of the Project site. Therefore, the Project would not physically divide an established community and there would be no impact.

The proposed quarry is allowable under the *Ranchlands* designation, as mineral extraction is listed as one of the allowable uses. The Project site is zoned as Agricultural Ranchlands with design review and scenic road overlays (AR-d1-sr). Mineral extraction is allowed in the AR zone subject to the issuance of a Use Permit and Architecture and Site Approval (ASA) issued in accordance with Chapters 5.20 and 5.65 of the County Zoning Ordinance. The Project would also be required to demonstrate compliance with the Surface Mining and Reclamation Act (SMARA) regulations in Section 4.10.370 of the County Zoning Ordinance. As part of the County's discretionary Use Permit process, the County would review the proposed reclamation plan and financial assurance cost estimate. The reclamation plan ensures that the post-mining Project site would be in usable condition consistent with the proposed end use (grazing).

The County may not issue a Use Permit for the Project unless it finds that the Project is consistent with applicable General Plan policies and complies with Zoning Ordinance requirements. Thus, the Project would only be approved if it did not conflict with an applicable County land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Based on the above analysis, the Project would have no impact on land use and planning.

3.1.5.3 Population and Housing

Project construction would occur over a 9-month period and employ 8 to 30 employees at any one time, depending on the components under construction. The Project would employ up to 15 people on-site for the operation of the quarry and processing plant. This number may be lower at times, depending on extraction and processing plant production rates. Up to two additional employees would be employed intermittently for revegetation and monitoring. With the low number of employees, it is likely that workers would come from the local labor pool and commute from nearby areas in Santa Clara and/or San Benito Counties (e.g., from cities of Gilroy, Hollister, or Watsonville). In addition, the proposed quarry would operate for 30 years, after which, the Project site would be reclaimed and employment at the quarry would end. The resulting reclaimed land would be used for grazing, consistent with its current use, and not result in any population increase beyond the current level. For these reasons, the Project would not induce substantial unplanned short-term or long-term population growth and there would be no impact.

The Project site contains one single-family residence that is occupied temporarily and seasonally by workers associated with on-site cattle ranching operations. This single-family residence and other on-site structures would remain, but would not be used as a residence during the mining term. The Project would not displace a substantial number of existing people or housing. Displacement of two or three employees who are not permanent occupants of the site would not result in a substantial new demand for housing in the region. As a result, there would be no impact related to the need to construct replacement housing.

3.1.5.4 Public Services

The Project would have a maximum of 15 employees on-site during peak construction, extraction, and processing times. Up to two additional employees would be employed intermittently for revegetation and monitoring. As described above, these employees would likely be provided by the local labor pool and would commute to the Project site from nearby areas. Because workers would come from the local area, they are already considered to be part of the existing demand for public services; therefore, the Project would not cause an increase in demand for schools, parks, schools, libraries, or other public services related to employee commuting and housing. Therefore, there would be no impact related to new or expanded public service facilities.

Project operation would take place on land being used for ranching and oil extraction uses, both of which require occasional responses from public services for fire protection, medical emergencies, or police investigation (e.g., traffic control, vehicle accidents, trespassing). The Project would have a minimal increase on the baseline level of service for the Project site, given its small employee size and location adjacent to existing roadways. While the addition of heavy equipment, fuel, and trucks to the non-urban environment could cause an increase in potential ignition sources, the Project includes removal of potential fuel sources (vegetation) to create a defensible space for wildfires. In addition, the Project would not use explosives as part of the quarrying process and water trucks, primarily used for dust control, could be used for fire suppression. There would be a minimal increase in potential fire hazards and subsequent fire protections services that would not result in the need for new or expanded facilities in order to serve Project demand. Therefore, there would be no impact related to new or expanded fire protection facilities.

Reclamation of the Project site following the 30-year Use Permit term would restore the Project site back to a condition suitable for the baseline use (grazing). Reclamation would return public service levels to current conditions and remove potential ignition sources created by the quarry. For these reasons, the Project would cause no post-operational impact on public services.

3.1.5.5 Recreation

The Project would not add permanent residents. As described above, Project employees would likely come from the local workforce. Thus, the Project would not create demand for more parks within the county. The Project would not increase the usage of recreational facilities rise above existing baseline levels; therefore, there would be no impact related to increased use of existing parks or recreational facilities that might cause physical deterioration.

The Project does not propose or require new or expanded recreational facilities; therefore, there would be no impact related to new or expanded recreational facilities.

3.1.6 Approach to Cumulative Impact Analysis

3.1.6.1 General Approach

CEQA Guidelines Section 15130 requires a discussion of the cumulative impacts of a project when the project's incremental contribution to a significant cumulative effect is "cumulatively considerable." This means that the project's incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects.

The analysis must determine whether the Project's contribution to any cumulatively significant impact is cumulatively considerable, as defined by CEQA Guideline Section 15065(a)(3). The cumulative impacts discussion for each environmental issue accordingly addresses the following issues: (1) would the effects of all present and probable future projects , combined with the Project's impact, result in a significant cumulative impact on the resource in question; and, if that cumulative impact is likely to be significant, (2) would the contribution from the proposed Project to that significant cumulative impact be cumulatively considerable?

Consistent with CEQA, the analysis of potential cumulative impacts is "guided by the 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. The discussion of cumulative impacts should reflect both their severity and the likelihood of their occurrence (CEQA Guidelines Section 15130(b).) The purpose of the cumulative analysis is to allow decision makers to better understand the impacts that might result from past, present, and reasonably foreseeable probable future projects, in conjunction with impacts from the Project addressed in this EIR.

Consistent with CEQA Guidelines Section 15130(b), the County has prepared a list of present and probable future projects that could result in related or cumulative impacts. This list includes projects outside the control of the County.

The analysis of cumulative impacts for some resources also considers projections contained in planning documents designed to evaluate regional or area-wide conditions. Specifically, this "projections approach" is used at least in part in the cumulative analyses for air quality, energy, greenhouse gas emissions, and transportation.

Regarding selection of projects to be included in the cumulative impact analysis, past projects were not included because existing, i.e., baseline, conditions within the cumulative impacts geographic area reflect a combination of the natural condition and the effects of past projects in the affected area. The following factors also were used to determine an appropriate list of present and future projects considered in the EIR cumulative impact analysis:

- **Certainty** – Whether a project is considered "probable," i.e., likely to occur, and whether the project description is sufficiently certain to meaningfully assess its impacts.
- **Information availability --** Whether timely and sufficient information was available about the project and its potential impacts to allow meaningful evaluation.
- **Similar Environmental Impacts** – The analysis considers "probable" projects that would contribute to effects on resources also affected by the Project in the vicinity of the Project site, to create cumulative impacts.
- **Geographic Scope** – The appropriate geographic area of cumulative analysis is identified on a resource-by-resource basis as dictated by relevant physical and/or environmental boundaries (such as the extent of the groundwater basin or the roadways traveled by Project vehicles). See **Table 3.1-2**.
- **Temporal Scope** – Incremental impacts of the Project could combine with the incremental impacts of other projects to cause or contribute to cumulative effects if the Project's construction, operation, and maintenance periods coincide in terms of timing with the effects of the other projects.

In general, projects that are approved and/or funded were included, as well as projects for which complete applications to the approving jurisdiction have been submitted. Projects for which a formal application has not been submitted and/or for which project characteristics have not been described were not included in the Table 3.1. Furthermore, any projects for which applications may have been submitted after approximately January 7, 2022 were not included in the cumulative project list because it was not practical to include them and still meet the Draft EIR publication schedule.

Projects included in the cumulative impact analysis are presented in **Table 3.1-1**, which also describes the approximate geographic location and timing of effects of each project. The projects in this table include a range of project types. They primarily consist of infrastructure and capital improvement projects, as well as private development projects. These projects are considered reasonably likely to be constructed and/or operated in a similar timeframe as the Project and could contribute incremental impacts that are similar to those of the Project. Because a number of the projects identified as cumulative projects are market-driven and/or have yet to be fully funded, the construction dates are unknown, as shown in Table 3.1-1. Therefore, for the purposes of this cumulative analysis, the EIR assumes these projects could cause impacts concurrently with this Project.

TABLE 3.1-1
CUMULATIVE PROJECTS LIST

Project Name and Jurisdiction	Location	Distance from Project Site (miles)	Project Description	Status and Estimated Schedule
U.S. 101 Widening Project, Caltrans	U.S. 101 from Monterey Road in Gilroy to SR 129 in San Benito County	0 to 4	Upgrade U.S. 101 to six lanes between Gilroy and SR 129 in San Benito County; reconstruct the Highway 101/SR 25 interchange, extend Santa Teresa Boulevard from Castro Valley Road to the US 101/SR 25 interchange; improve the southbound US 101 off-ramp at SR 129, grade-separate the Union Pacific Rail crossing on SR 25 west of Bloomfield Avenue, construct bicycle facilities	Dependent on funding, 1 percent funded. Schedule unknown.
Modification of Architecture and Site Approval for Ag Structure on Lena Avenue, County of Santa Clara	450 Lena Avenue, Gilroy	9.5	20,000 square foot structure for agricultural use	Plans submitted August 2020. Under administrative review.
Compost Pad on Pacheco Pass Highway, County of Santa Clara	3675 Pacheco Pass Highway, Gilroy	6.6	Use Permit modification to allow the construction of a compost pad containment pond and the removal of the requirement of food waste being covered.	Unknown
Shamrock Seeds Project, County of Santa Clara	6640 Holsclaw Road, Gilroy	6	Demolition of existing on-site greenhouse totaling 14,433 square feet and construction of a new 10,000-square-foot agricultural research building, parking lot, and two sets of greenhouse structures.	Approved February 2019, timing of construction unknown
Gilroy Rodeo Grounds, County of Santa Clara	7955 Ferguson Road, Gilroy	7.4	Proposed arena, pen, warm-up arena, and other infrastructure, which would attract up to 6,500 spectators, 500 contestants, and 30 volunteers at any one time when a large event is held.	Permits approved May 2019, events scheduled for August 2021
Z-Best Compost Facility Modification, County of Santa Clara	980 CA-25, Gilroy	1.9	Expand and convert a Compost Technology Inc. system to an engineered Composting System open aerated model.	Draft EIR released January 15, 2021
Christopher Ranch Farm Worker Housing, County of Santa Clara	935 Southside Drive, Gilroy	4	Use Permit, ASA and Grading Approval for the construction of up to 200 units permanent farm worker housing units within five 3,600-square-foot detached buildings, a 1,460-square-foot laundry and restroom facility, and a 840-square-foot modular caretaker unit. Eleven parking spaces with five bus parking spaces with loading area and open recreational space area to the rear.	Approved
Gilroy High-Speed Rail station and alignment, California High Speed Rail Authority	Monterey Street between 7th & 9th Streets, Gilroy	3	Proposed California High-Speed Rail station and associated alignment.	Environmental clearance is anticipated in early 2022
Pacheco Reservoir Expansion Project (PREP)	CA 152 (Pacheco Pass Highway)	16	Reservoir expansion from 5,500 acre-feet up to 140,000 acre-feet enough to supply up to 1.4 million residents with water for one year in an emergency. The project will also reduce the frequency and severity of water shortages during droughts, protect our drinking water supply and infrastructure, and improve fish habitat.	Environmental clearance is in process. The end of the Draft EIR public comment period is February 15, 2022

SOURCES: VTA 2013; County of Santa Clara 2021b; California High Speed Rail Authority 2021.

In additional to the projects in Table 3.1-1, the Santa Clara County General Plan (County of Santa Clara 1994), San Benito County General Plan (San Benito County 2015), and Santa Clara Valley Habitat Plan (County of Santa Clara et al. 2012) were reviewed for potential future development projects, new roadway corridors, or changes in allowed development patterns that could result in cumulative impacts. No additional projects of this type were identified in the vicinity of the Project site. The surrounding area is General Plan designated and zoned for agricultural, rangeland, and open space uses—similar to existing conditions at the Project site and in the vicinity.

3.1.6.2 Strada Verde Project

As discussed above, Table 3.1-1 does not include projects for which applications may have been filed after January 7, 2002 because it was not practical to include them and still meet the Draft EIR publication schedule. For example, on February 4, 2022, the County of San Benito received an application for the Strada Verde Specific Plan, which is located west of the Project site, across U.S. 101. Specifically, Bristol SB, LLC filed a preliminary application with the San Benito County Resource Management Agency (RMA), Planning and Building Inspection Services division, for the Strada Verde project May 19, 2019 (Holland and Knight, 2021). The application requested entitlements for conversion of approximately 2,777 acres of agricultural land in northwest San Benito County to various uses, including Research/Development, Automotive Testing/Tracks, Distribution, Offices, Business/Professional Services Commercial, Light Industrial, Hospitality, Retail, and Public/Private Services, with building space totally approximately 7.2 million square feet (sf), the creation of a 209.5-acre Pajaro River Park, and preservation of 561.7 acres exclusively for agriculture. The 2019 preliminary application was never deemed complete (Holland and Knight, 2021).

After submitting the 2019 preliminary planning application package, the Strada Verde applicant prepared an initiative for the proposed General Plan Amendment, Specific Plan, and Zone change. The initiative qualified for the November 3, 2020 general election as "Measure N" Holland and Knight, 2021). Sixty percent of voters rejected Measure N. After Measure N did not pass, the applicant did not withdraw its preliminary planning applications from consideration. The Strada Verde applicant informed the San Benito County Board of Supervisors on February 23, 2021, and formally via letter dated March 10, 2021, that they intended to proceed with the project and its pending planning applications in accordance with applicable County procedures and requirements (Holland & Knight, 2021). Due to the outcome of the election and the fact that the application was not complete, the Strada Verde project as described in the 2019 application was not considered a probable future project at the time that the Sargent Quarry Draft EIR was being prepared.

On February 4, 2022, the Strada Verde applicant filed another application with San Benito County RMA, Planning and Building Inspection division. The application consisted of an updated project application, amending the previous application form, including amending proposed land uses (Wiseman). Technical reports with environmental information were not submitted to San Benito County with the February 4, 2022 application submittal, and it had not been deemed complete as of February 24, 2022.

The Strada Verde project as described in the 2021 application was not selected as a probable future project for inclusion in Table 3.1-1 for several reasons. First, given the project's history, it is speculative whether it would ultimately be approved as described in the 2021 application. Second, the new project application was submitted after January 7, 2022, too late to include the project in the cumulative impact analysis and still meet the Draft EIR publication schedule. Third, notwithstanding Draft EIR schedule considerations, the technical reports that were referenced in the new project application that might have otherwise assisted in predicting the project's environmental impacts were not filed with San Benito County when the application was filed, and thus were not publicly available.

3.1.6.3 Geographic Areas for Cumulative Analysis

For each resource area, cumulative impacts may occur over different geographic areas. For example, the Project effects on air quality would combine with the effects of projects in the entire air basin, whereas noise impacts would primarily be localized to the surrounding area. The geographic area that could be affected by the Project varies depending upon the type of environmental issue being considered. **Table 3.1-2** provides a summary of the different geographic areas used to evaluate cumulative impacts.

TABLE 3.1-2
GEOGRAPHIC AREAS FOR CUMULATIVE ANALYSIS

Resource Area	Geographic Area
Aesthetics	Project public viewshed; i.e., views of the Project site from U.S. 101
Air Quality	San Francisco Bay Area Air Basin and North Central Coast Air Basin
Biological Resources	Valley Habitat Plan Study Area and Permit Area
Cultural Resources and Tribal Cultural Resources	Project site and the vicinity of the Project site
Energy	Countywide (electricity) and 40-mile travel radius (fuel)
Geology, Soils, and Paleontological Resources	Geologic and soils impacts are site specific, and therefore would not contribute to cumulative impacts. For paleontological resources, and the Project vicinity in areas with similar geologic conditions.
GHGs	Statewide
Hazards and Hazardous Materials	A 0.25-mile radius around the Project site, adjacent parcels, and truck hauling routes
Hydrology and Water Quality	Pajaro River watershed, groundwater basins in the vicinity of the Project site
Mineral Resources	Monterey Bay and South San Francisco Bay Production-Consumption (P-C) regions
Noise and Vibration	Project site and adjacent parcels
Transportation/Traffic	Adjacent roadways and highways
Utilities and Service Systems	Service areas of regional utility and service providers
Wildfire	Region

3.1.7 References

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3.2 Aesthetics

3.2.1 Introduction

This section describes the existing visual character of the Project site and vicinity and the changes to those conditions that would result from implementation of the Project. The analysis focuses on the change in visual character, particularly as it would affect views from U.S. 101, which provides the only publicly accessible areas from which the Project site is easily visible. The effects of Project-caused light and glare also are evaluated.

This analysis focuses on impacts on humans and structures; potential effects on wildlife are addressed in Section 3.4, *Biological Resources.*

3.2.2 Regulatory Setting

3.2.2.1 Federal

There are no federal laws or regulations regarding visual resources that would apply to the Project.

3.2.2.2 State

Scenic Highways Program

The California legislature created the Scenic Highway Program in 1963 to protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. State requirements in the Streets and Highways Code (Section 260 et seq.) govern the Scenic Highway Program. A highway may be designated as “scenic” depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers’ enjoyment of the view. The Scenic Highway System includes highways that are either eligible for designation or have been designated as such.

The status of a State scenic highway changes from “eligible” to “officially designated” when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation from Caltrans. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways; however, State legislation is required for designation.

The section of U.S. 101 in the vicinity of the Project site is not a designated State Scenic Highway, nor has it been determined eligible for designation as a State Scenic Highway (Caltrans 2021).

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) and its implementing regulations include reclamation plan standards related to aesthetics and visual resources, including those that consider slope stabilization, erosion control, revegetation, equipment removal, stream protection, and recontouring. Under Section 3704.1(e) of the SMARA regulations, final quarry slopes must be capable of being revegetated, and shall blend visually with the local topography.

3.2.2.3 Local

County of Santa Clara General Plan

As stated in the General Plan, Santa Clara County scenic resources include the coastal mountain ranges to the west of the valley and the oak chaparral of the Diablo Range on the east, which together frame an urban landscape in the middle (County of Santa Clara 1994, page H-40). The County's natural rivers and streams, wetlands near the San Francisco Bay edge, urban parks, and architecture of distinction are considered to be scenic resources. Relevant General Plan policies are listed below.

Parks and Recreation Chapter, Scenic Highways

Policy C-PR 37: The natural scenery along many of Santa Clara County's highways should be protected from land uses and other activities which would diminish its aesthetic beauty.

Policy CP-38: Land use should be controlled along scenic roads so as to relate to the location and functions of these roads and should be subject to design review and conditions to assure the scenic quality of the corridor.

Policy C-PR 39: The visual integrity of the scenic gateways to the South County (Pacheco Pass, Hecker Pass, Route 101 south of Gilroy, and a Coyote greenbelt area north of Morgan Hill) should be protected.

Policy C-PR 43: New structures should be located where they will not have a negative impact on the scenic quality of the area, and in rural areas they should generally be set back at least 100 feet from scenic roads and highways to minimize their visual impact.

Policy C-PR 44: Landscaping with drought-resistant native plants should be encouraged adjacent to scenic roads and highways.

Policy C-PR 45: Activities along scenic highways that are of a substantially unsightly nature, such as equipment storage or maintenance, fuel tanks, refuse storage or processing and service yards, should be screened from view.

The General Plan contains additional goals and policies that are applicable to all development projects in the unincorporated areas of the County. The Countywide and Rural Unincorporated Areas chapters of the General Plan contain various policies associated with visual quality, which are pertinent to the Project (County of Santa Clara 1994):

Growth and Development Chapter

Policy R-GD 17: Design Review Zoning Districts, including Design Review Guidelines, shall apply to primary viewshed areas most immediately and directly visible from the valley floor, lands up to and including the first ridge, or those within approximately 1 to 2 miles' distance from the edge of the valley floor.

Policy R-GD 31: Ridgelines and ridge areas have special significance for both public policy and private interests. Ridgeline and hillside development that creates a major negative visual impact from the valley floor should be avoided or mitigated, particularly for those areas most immediately visible from the valley floor. Ridgeline development policy should also take into account the need to allow reasonable use and development of private land.

Land Use Chapter

Policy R-LU 16: Hillsides: Mountainous lands and foothills unsuitable and/or unplanned for annexation and urban development. Lands so designated shall be preserved largely in natural resource related and open space uses in order to:

a. support and enhance rural character;

b. protect and promote wise management of natural resources;

c. avoid risks associated with the natural hazards characteristic of those areas; and

d. protect the quality of reservoir watersheds critical to the region's water supply.

Policy R-LU 17: These lands also contain such important resources as grazing lands, mineral deposits, forests, wildlife habitat, rare or locally unique plant and animal communities, historic and archeological sites, and recreational and scenic areas of regional importance, which serve to define the setting for the urbanized portions of the County. Given the importance of these lands to the County's overall quality of life, allowable uses shall be consistent with the conservation and wise use of these resources and levels of development shall be limited to avoid increased demand for public services and facilities.

Parks and Recreation Chapter

Policy R-PR 39: The natural scenery which exists along many of the County's highways should be protected from land uses and other activities which would diminish its aesthetic qualities.

Resource Conservation Chapter

Policy R-RC 98*:* Hillsides, ridgelines, scenic transportation corridors, major County entryways, stream environments, and other areas designated as being of special scenic significance should receive utmost consideration and protection due to their prominence, visibility, and overall contribution to the quality of life in the County.

Policy R-RC 102: Structures on ridgelines must be located, constructed or landscaped so that they do not create a major negative visual impact from the Valley floor. Land should be divided in such a way that building sites, if possible, are not located on ridgelines.

Policy R-RC 103*:* Development in rural areas should be landscaped with fire resistant and/or native plants which are ecologically compatible with the area.

Regional Parks, Trails, and Scenic Highways Plan Map

The County of Santa Clara Regional Parks, Trails, and Scenic Highways Plan Map (part of the County's General Plan) provides information regarding the current status and future plans for regional parks, trails, and scenic highways. Freeways and expressways are included on the map to recognize quality urban road design, and to promote the protection of scenic surroundings of notable urban and rural routes (County of Santa Clara 1994). The portion of U.S. 101 adjacent to the Project site and to the south is a County-designated Scenic Freeway and considered the gateway into Santa Clara County from San Benito County. This portion of U.S. 101 is not a part of the State Scenic Highway Program administered by Caltrans. However, for the purpose of this analysis, U.S. 101 is considered a scenic resource as it has been designated by the County as a Scenic Freeway.

Zoning Ordinance

The Project area is within a Design Review Combining District, Santa Clara Valley Viewshed (-d1) and Scenic Roads Combining District (-sr). The -d1 combining district is intended to conserve the aesthetic qualities of hillsides most visible from the valley floor through utilization of development standards, design guidelines, design review, and incentives for smaller projects. The purpose of the -sr combining district is to protect the visual character of scenic roads through application of development regulations. For example, under the -sr combining district, no building or structure is allowed within 100 feet of the U.S. 101 right-of-way. Structures within 100 feet of the U.S. 101 right-of-way would be subject to design review by the Planning Commission [Zoning Ordinance Section 3.30.030 (C.)] (County of Santa Clara 2017).

Lighting Guidelines for Architecture and Site Approval

Architecture and Site Approval (ASA) is a procedure established by the County Zoning Ordinance to review the quality of site and architectural design associated with proposed projects. The County Guidelines for Architecture and Site Approval (page 10) include a design standard related to external lighting that provides:

> External lighting, when used, should be subdued. It should enhance building design and landscaping, as well as provide for safety and security. It should not create glare for occupants, neighboring properties or streets. Lighting fixtures should be durable and compatible with building design and landscaping. Tall fixtures that illuminate large areas should be avoided. Not allowed are festooned or naked-bulb lighting, or flashing bulb lighting. Energy conservation should be given consideration when planning the amount and type of lighting. High crime areas should be well lit.

Mining Regulations

County of Santa Clara surface mining regulations are located in Section 4.10.370 of the County Zoning Ordinance. Their purpose is to ensure the continued availability of important mineral resources, while regulating surface mining operations as required by SMARA (specifically Public Resources Code Section 2207, related to annual reporting requirements), and State Mining and Geology Board regulations for surface mining and reclamation practices. The following regulations related to aesthetics from Zoning Ordinance Section 4.10.370 would apply to the Project.

Zoning Section	Description
4.10.370: Supplemental Use Regulations – Part II: County Regulations	**2. Appearance.** Surface mines shall be operated in a neat and orderly manner, free from junk, trash, or unnecessary debris. Buildings shall be maintained in a sound condition, in good repair and appearance. Weeds shall be cut as frequently as necessary to eliminate fire hazards. Salvageable equipment stored in a non-operating condition shall be suitably screened or garaged where normally visible from public view. **6. Setbacks from property lines.** a) Cut slope setbacks. Cut slopes shall be no closer than 25 feet distant from any adjoining property line, except where adjoining property is being mined; nor 50 feet to any right-of-way of any public street, or official plan line or future width line of a public road. b) Ridgeline setbacks. When surface mining occurs in a canyon area which abuts an urban area or the ridgeline is visible from the valley floor, the top of the uppermost cut area shall be as shown in an approved reclamation plan, or in the absence of an approved plan, not less than 50 feet from the top of the ridge existing prior to excavation. **7. Fencing and posting.** a) It is the intent of this subsection that fencing will be required only for those portions of an excavation needing fencing for purposes of public safety; other portions may need posting only. Where excavation is authorized to proceed in stages, only the area excavated plus the area of the stage currently being excavated need be fenced. Adequate fencing shall be provided to exclude unauthorized dumping. b) The Planning Commission may require the enclosure of all or a portion of an excavation by an approved fence either along the property line or the periphery of the excavation where deemed necessary for public safety by the Planning Commission. Such fence shall not be closer than ten feet to the top edge of any cut slope. All fences shall have suitable gates at accessways. Gates to be securely locked during hours and days of non-operation. c) Fencing type shall be determined by the Planning Commission. d) Signs shall be conspicuously posted along the periphery of the property. The signs shall be posted in such a manner and at such intervals as will give reasonable notice to passersby of the matter contained in such notice by stating in letters not less than four inches in height. WARNING: COMMERCIAL QUARRY ON THESE LANDS; Santa Clara County Use Permit No: _______ In addition, the signs shall be pictorial in the nature of information being disclosed for non-English readers. **8. Screening.** a) Screening shall be required for excavations in urbanized and scenic corridors or locations at the time of excavation so that the screening will provide a reasonable means of securing use and enjoyment of nearby properties. b) The screening by means of installation of berms, fences, plantings of suitable shrubs and trees. They shall be placed and maintained in order to minimize visibility from public view of cut slopes or mining operations and equipment. c) Such screening when required by the Planning Commission may be along the streets and exterior property lines or the perimeter of the visible portions of the site being operated.

3.2.3 Environmental Setting

3.2.3.1 Key Terms Used in This Analysis

This section defines terms and concepts where establishing a shared understanding of the meaning is important to the consideration of the Project's potential impacts to aesthetics.

- **Visual character** refers to the features of the natural (e.g., landforms, vegetation, rock and water features) and built (e.g., buildings, utility infrastructure) features of the landscape that contribute to the public's experience and appreciation of the environment.
- A **scenic vista** is generally considered to be a location from which the public can experience unique and exemplary views, which are typically from elevated vantage points that offer panoramic views of great breadth and depth. There are no designated scenic vistas in the vicinity of the Project site.
- For this analysis, **scenic resources** are specifically defined as features that are visible from a state- or county- designated scenic highway, including but not limited to trees, rock outcroppings and historic buildings within a state scenic highway.
- For purposes of this analysis, **light** refers to artificial lighting used to illuminate exterior areas.
- **Glare** is typically a harsh, bright light, such as glare caused by sunlight. Glare also can be caused by light reflections from pavement, vehicles, and building materials, such as reflective glass, polished surfaces, or metallic architectural features. During daylight hours, the amount of glare depends on the intensity and direction of sunlight relative to the reflective surface. At night, the intensity of glare depends on the design, strength, direction, and location of artificial lighting.

The degree of impact depends on viewer sensitivity to aesthetic changes. For this analysis, viewer sensitivity is categorized into high, moderate, and low visual sensitivity ranges. These ranges are based on a composite measurement of the overall susceptibility of an area or viewer group to adverse visual or aesthetic impacts, given the combined factors of:

- **Visual quality:** the overall visual impression or attractiveness of an area as determined by the particular landscape characteristics, including landforms, rock forms, water features, and vegetation patterns.
- **Viewer types and volumes of use:** the types of people viewing the affected landscape including, for example, motorists traveling on nearby roadways, park and other recreational area users, as well as residents and business patrons in Santa Clara County with views of the Project site. Land uses that derive value from the quality of their settings, such as parks or scenic routes, are considered particularly sensitive to changes in visual setting conditions.
- **Viewer exposure:** landscape visibility, viewing distance, viewing angle, extent of visibility, and duration of view. For the purposes of this analysis, viewing distance is described in three general categories. Foreground refers to views observed from within 0.25 to 0.5 miles from viewer; middle-ground refers to views from the foreground out up to 2 miles from the viewer; background extends from that middle-ground distance outward, as far as the view extends (i.e., the horizon).

3.2.3.2 Visual Character of the Region

Scenic resources in the vicinity of the Project site include the coastal mountain ranges to the west and Diablo Range on the east. The hills, ranchlands and streams within the county are considered to be scenic resources in the County General Plan. The visual character in the region is characterized by valleys with predominantly rural agricultural uses and rolling hills with grasslands and scattered oak trees. Depending on the viewer's location and vantage point in the region, views typically include agricultural fields and rural development in the foreground and middle-ground, with views of gentle, rolling mountains in the background. **Figure 3.2-1**, which depicts views east looking toward the Diablo Range from the Project site, is representative of the existing visual character in the region.

The grasslands of the coastal mountain ranges and Diablo Range are brown during dry parts of the year such as the summer and fall and become green during the rainier portions of the year such as winter and spring. Irrigated agricultural fields also are visible throughout the valley floor and are often flat and green. Scattered industrial and agricultural buildings as well as ranches and residences are located throughout the agricultural areas. U.S. 101 runs in the north and south direction, just east of the Project site, and is a four-lane highway with an elevated overcrossing at Tar Creek east of the Project site. The Union Pacific railroad travels on tracks adjacent to U.S. 101.

Adjacent privately owned properties north, west, and south of the Project site consist of grassland and oak forests transected by creeks and drainage channels. Freeman Quarry (an aggregate quarry which has been reclaimed), is located approximately 2 miles to the north. Mining at Freeman Quarry has ceased, and the mining and processing areas have been reclaimed and closed. Directly east of the Project site are active agricultural lands planted with row crops on the Santa Clara Valley floor.

3.2.3.3 Visual Character of the Project Site

The proposed Project site is located on Sargent Ranch in the coastal mountain range near the southern tip of Santa Clara County. Project site elevations range from approximately 150 feet above mean sea level (msl) to 800 feet above msl. The Project site is currently used for cattle grazing as well as cultivation of dry-farmed oat hay crops for cattle feed. The hilly topography of the Project site is dotted with oak trees. Riparian vegetation is located along several creeks and drainages that cut across the property. As shown in **Figure 3.2-2**, the existing visual character of the Project site is characterized primarily by rolling brown hills and agricultural features, such as barbed wire fencing, pipe corrals, barns and other outbuildings. Scenic resources present on the project site include trees, buildings, and hills.

As stated in Section 3.1.2, *Regulatory Setting*, the section of U.S. 101 in the vicinity of the Project site (i.e., adjacent to the Project site and to the south) is a County-designated Scenic Freeway and considered the gateway into Santa Clara County from San Benito County. From U.S. 101, unobstructed views of fields and rural agricultural development are in the foreground and middle-ground and the Sargent Hills are visible in the background. From some locations along U.S. 101, vegetation and trees in the foreground obscure views of the Project site.

SOURCE: ESA, 2020

SCC Sargent Quarry

Figure 3.2-1
Representative Photo of Regional Visual Character

ESA

SOURCE: ESA, 2020

SCC Sargent Quarry

Figure 3.2-2
Representative Photo of Project Site Visual Character

ESA

Light and Glare

The Project site is surrounded by a mix of rural agricultural areas and open space adjacent to roadways. The primary sources of lighting in the vicinity of the Project site include vehicle headlights, street lighting, parking lot lighting, security lighting, building lighting, as well as various other sources of light from surrounding commercial, industrial, and residential uses. The only source of artificial light on the Project site is the existing residence.

Viewer Types and Exposures

Public viewer groups and sensitive viewpoints evaluated for this analysis include motorists along major or scenic roadways, visitors to parks and recreational areas, and visitors to scenic vistas. For each viewer group analyzed, viewer exposure conditions were evaluated based on information of traffic flows along local roadways in Section 3.13, *Transportation.*

Variables considered include the angle of view, the extent to which views are open or screened, the duration of view, and viewing distance. Viewing angle and extent of visibility consider the location of the Project site relative to the viewer and whether visibility conditions would be open or panoramic, or limited by intervening vegetation, structures, or terrain. Duration of view pertains to the amount of time the Project typically would be seen from a sensitive viewpoint.

In general, duration of view would be shorter or fleeting in instances where the Project would be seen for brief or intermittent periods (such as from major travel routes and recreation destination roads) and greater or sustained in instances where the Project would be seen regularly and repeatedly (such as from public use areas). Viewing distances are described according to whether the Project would be viewed within a foreground (within 0.5 mile), middle-ground (0.5 to 2 miles), or background (beyond 2 miles) zone.

Motorists on Major or Scenic Travel Routes

As noted previously, there are no designated or eligible State Scenic Highways within the viewshed of the Project site. The closest State Scenic Highways (designated or eligible) are State Route (SR) 156 and the portion of U.S. 101 south of SR 156. Both are State-eligible highways located approximately 3.1 miles from the Project site. The Project site would not be visible from these State-eligible highways due to intervening topography and the viewing angle.

As mentioned above, the portion of U.S. 101 that is adjacent to the east of the Project site is a County-designated scenic highway. The proposed processing plant and portions of the quarry would be visible from both northbound and southbound U.S. 101 adjacent to and near the Project site.

U.S. 101 is a major transportation route in the region that is used by commuters as well as recreationalists. Along this section of U.S. 101, the viewing duration for motorists would be brief unless motorists are slowed by traffic congestion along U.S. 101. As described in Section 3.13, *Transportation*, peak hour and daily on U.S. 101 near the Project site are approximately 6,000 vehicles and 63,000 vehicles, respectively. The speed limit along this section of U.S. 101 is 65 mph.

Parks and Recreational Areas

Recreationalists are generally determined to be the viewers most sensitive to visual impacts. The closest County park to the Project site is Chitactac-Adams Heritage County Park, approximately 9 miles northwest in Gilroy. The closest City of Gilroy park is Cydney Casper Park, 4 miles north of the Project site. Due to intervening topography, the Project site would not be visible from either of these locations (FHWA 2015). There are no public trails and/or other recreational facilities within or in proximity to the Project site.

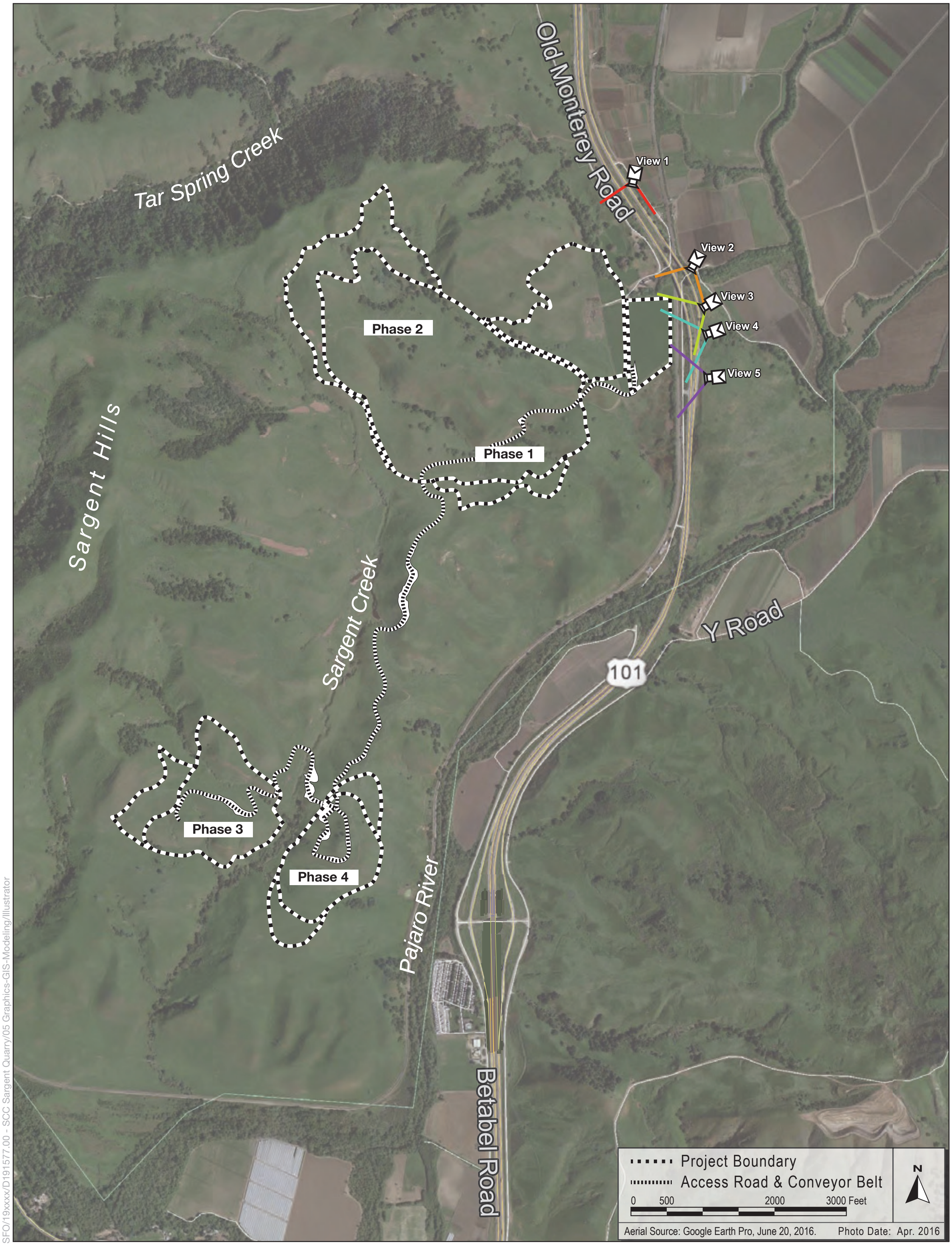
Key Observation Points

Key observation points (KOPs) were established to provide a representative cross-section of affected landscapes in the visual study area. These KOPs were selected based on the Project's viewshed, visual exposure, and sensitive viewer groups, as well as the availability of publicly accessible vantage points or view opportunities. The selected KOPs are shown on **Figure 3.2-3**. Comparisons of existing (pre-Project) views from these KOPs with interim simulations are provided in Figure 3.2-4 through Figure 3.2-8. Because the screening berm would remain after Project operation, the interim conditions are used to simulate reclaimed Project conditions. However, certain elements shown in the interim conditions would not be visible after reclamation. For example, in Figure 3.2-8, the processing plant and mining Phase 3 are visible in the interim view; these would no longer be visible after reclamation.

The visual simulations viewed from these KOPs provide the basis for evaluating the changes in visual character and quality of views toward the Project site. The only publicly accessible vantage points of the Project are from U.S. 101. No other publicly accessible vantage points were identified that would experience a greater degree of visual change than the selected KOPs along U.S. 101 southbound. Additionally, farther south along U.S. 101, the Project site (Phases 3 and 4) would be screened from U.S 101 by intervening topography. Therefore, the visual simulations that are used in this analysis as representative views are located along the portion of U.S. 101 from which the northern portion of the Project site (i.e., Phases 1 and 2 and the processing plant) would be visible.

Visual Sensitivity

Visual sensitivity is determined by a composite measurement of the overall susceptibility of an area or viewer group to adverse visual or aesthetic impacts given the combination of existing landscape quality, viewer type, and exposure conditions. For example, in an area of distinct visual quality and long view duration, such as a designated scenic vista, visual sensitivity would be considered high. In an area with distinct visual quality but short view durations, such as a designated scenic highway, viewer sensitivity would be considered moderate. In an area with less unique visual quality and short view durations, such as views from a slow-moving car of an industrial park in an area where such views are common, visual sensitivity would be considered low. **Table 3.2-1** summarizes the overall visual sensitivity from each KOP. Due to the high volume of viewers, the short to medium duration of views and the unobstructed nature of views in the foreground, visual sensitivity was determined to be moderate.



SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

SOURCE: Digital Imaging Studio, 2018

SCC Sargent Quarry

Figure 3.2-3
Photosimulation Key

ESA

TABLE 3.2-1
SUMMARY OF VISUAL SENSITIVITY FINDINGS: VIEWER TYPES AND VISUAL EXPOSURES

Primary Viewer Type	Use and Visual Exposure Description	Visual Sensitivity	Visible Project Elements
Local Motorists			
U.S. 101 (KOP 1)	Brief views by a high volume of local motorists from a designated scenic highway. Views of Project site in foreground. Low view angle, unobstructed. Short to medium view duration depending on traffic congestion	Moderate	Processing Plant and Screening Berm
U.S. 101 (KOP 2)	Brief views by a high volume of local motorists from a designated scenic highway. Views of Project site in foreground. Low view angle, unobstructed. Short view duration.	Moderate	Processing Plant and Screening Berm and Phase 2 Mining Area
U.S. 101 (KOP 3)	Brief views by a high volume of local motorists from a designated scenic highway. Views of Project site in foreground. Low view angle, unobstructed. Short to medium view duration depending on traffic congestion	Moderate	Screening Berm
U.S. 101 (KOP 4)	Brief views by a high volume of local motorists from a designated scenic highway. Views of Project site in foreground. Low view angle, unobstructed. Short to medium view duration depending on traffic congestion	Moderate	Screening Berm
U.S. 101 (KOP 5)	Brief views by a high volume of local motorists from a designated scenic highway. Views of Project site in foreground. Low view angle, unobstructed. Short to medium view duration depending on traffic congestion	Moderate	Phase 3 Mining Area, Processing Plant, Screening Berm

3.2.4 Impact Evaluation

3.2.4.1 Approach to the Analysis

CEQA Guidelines Appendix G, Section I, suggests, "In non-urbanized areas," a project would have a significant effect on the environment if it would "substantially degrade the existing visual character or quality of public views of the site and its surroundings." Public views are defined for purposes of this EIR as "those that are experienced from publicly accessible vantage point." A different consideration is suggested if a project would be located in an urbanized area. The Project is not located in an area that meets the CEQA definition of "urbanized" (Pub. Res. Code Section 21071); therefore, the analysis below focuses on the potential for the Project to substantially degrade the existing visual character or quality of public views.

The analysis is based on review of information provided by the Applicant that has been independently verified on behalf of the County by Environmental Science Associates, including Project maps, drawings, aerial and ground-level photography of the study area, local planning documents, and computer-generated visual simulations. Field observations were conducted by Environmental Science Associates staff on August 4, 2020, to document existing visual conditions and to document potentially affected sensitive viewing locations.

The methodology used in this analysis is adapted from an approach to visual impact assessment developed by the Federal Highway Administration (FHWA 2015). The FHWA analysis uses the concepts of visual character and quality to evaluate visual impacts, specifically: (1) the compatibility of the visual impact with the existing environment; (2) the sensitivity of viewers to impacts; and (3) the degree of impact to visual quality. The methodology in this document evaluates compatibility of the visual impact by analyzing the visual contrast, project dominance, and screening that would be introduced by the project (these concepts are described further below). The methodology considers the sensitivity of viewers (described in further detail above under the heading "Viewer Types and Exposures." This analysis then determines the degree of impact by considering the combined effect of overall visual change introduced by the project (described in more detail below) along with the visual sensitivity of viewers.

Key factors in determining the degree of visual change are visual contrast, project dominance, and visual screening. The interaction of visual change with the components of visual sensitivity (visual quality, viewer types and volumes, and viewer exposure; see Section 3.1.3, *Environmental Setting*) is discussed below under "Overall Adverse Visual Impact."

Visual Contrast

Visual contrast is a measure of the degree of change in line, form, color, and texture that a project would create, when compared to the existing landscape. Visual contrast ranges from "none" to "strong", and may be characterized as:

- **None** – The element contrast is not visible or perceived.
- **Weak** – The element contrast can be seen, but does not attract attention.
- **Moderate** – The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- **Strong** – The element contrast demands the viewer's attention and cannot be overlooked.

Project Visual Dominance

Project visual dominance is a measure of the apparent size and bulk of a proposed component relative to other visible landscape features in the viewshed, or seen area. The visual dominance of a component is affected by its relative location in the viewshed and the distance between the viewer and the proposed component.

Visual Screening

View screening (blockage or impairment) is a measure of the degree to which a project would obstruct or block views to aesthetic features due to its position and/or scale. Blockage of aesthetic landscape features or views can cause adverse visual impacts, particularly in instances where scenic or view orientations are important to the use, value, or function of the land use.

Overall Adverse Visual Impact

The determination of impact significance is based on combined factors of visual sensitivity and the degree of visual change that the project would cause. Overall adverse visual impact reflects the composite visual changes to both the directly affected landscape and from sensitive viewing locations. Overall visual change is determined by the degree to which the visual changes introduced by the project would result in contrast with the existing landscape, would block or screen aesthetic features in a given view, and the extent to which project components would dominate views of the surrounding landscape. For example, a project such as a solar generating facility in an agricultural area results in moderate to high contrast with the surrounding landscape due to the changes in form line and color introduced by the proposed project. However, if the project does not block any important visual features in the surrounding landscape and does not dominate existing views, then the overall visual change would be considered moderate. The degree of visual impact also considers the timescale of impacts; impacts that are temporary are considered less adverse than permanent visual impacts. The visual impact levels referenced in this analysis indicate the relative degree of overall change to the visual environment that the project would create, considering visual sensitivity together with the project's visual contrast, screening, and dominance.

Table 3.2-2, *Guidelines for Determining Adverse Aesthetic Impact Significance,* shows how the inter-relationship of these overall factors determines the level of significance of visual impacts and presents the impact classifications applied in this analysis.

TABLE 3.2-2
GUIDELINES FOR DETERMINING ADVERSE AESTHETIC IMPACT SIGNIFICANCE

Overall Visual Sensitivity	Overall Visual Change				
	Low	Low to Moderate	Moderate	Moderate to High	High
Low	No Impact	No Impact	Less than significant	Less than significant	Less than significant
Low to Moderate	No Impact	Less than significant	Less than significant	Less than significant	Less than significant
Moderate	Less than significant	Less than significant	Less than significant	Potentially Significant	Potentially Significant
Moderate to High	Less than significant	Less than significant	Potentially Significant	Potentially Significant	Significant
High	Less than significant	Less than significant	Potentially Significant	Significant	Significant

NOTES:

No Impact. Effects may or may not be perceptible, but are considered minor in the context of existing landscape characteristics and view opportunity.
Less than Significant. Impacts are perceived as negative, but do not exceed environmental thresholds.
Potentially Significant. Impacts are perceived as negative and may exceed environmental thresholds depending on project- and site-specific circumstances (e.g., orientation of the viewer).
Significant Impacts. Impacts with feasible mitigation may be reduced to less-than-significant levels or avoided altogether. Without mitigation or avoidance measures, significant impacts would exceed environmental thresholds.

SOURCE: ESA, modified from Federal Highway Administration (FHWA 2015).

As explained in Section 3.2.3.3, to document the visual change attributable to the Project, visual simulations have been prepared and included in the following impact analysis. F**igures 3.2-4 through 3.2-8** present before and after images showing the Project from the KOPs identified above. The simulated images present the location, scale, and appearance of the Project as it would be seen from the publicly accessible KOPs identified within the study area.

Current

Interim

SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

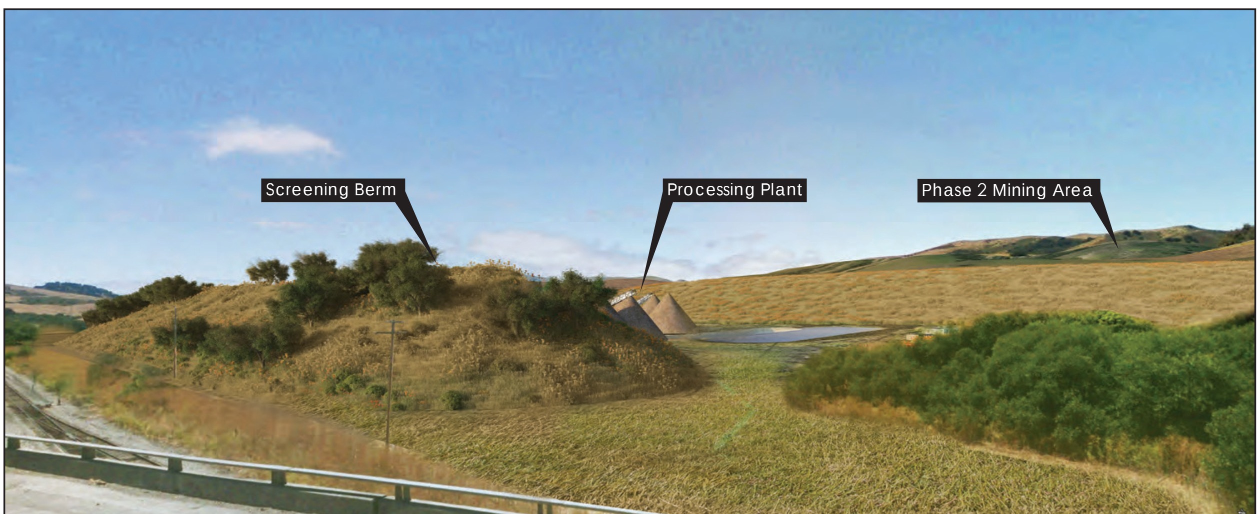
SOURCE: Digital Imaging Studio, 2018

SCC Sargent Quarry

Figure 3.2-4
Photosimulation View 1

ESA

Current



Interim

SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

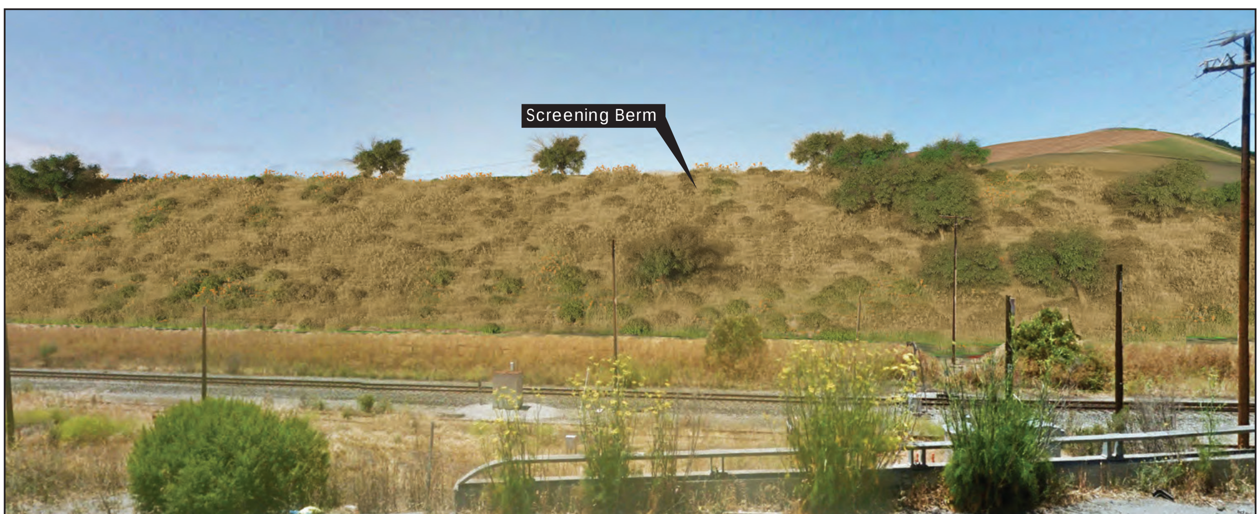
SOURCE: Digital Imaging Studio, 2018

SCC Sargent Quarry

Figure 3.2-5
Photosimulation View 2

ESA

Current



Interim

SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

SOURCE: Digital Imaging Studio, 2018

SCC Sargent Quarry

Figure 3.2-6
Photosimulation View 3

ESA

SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

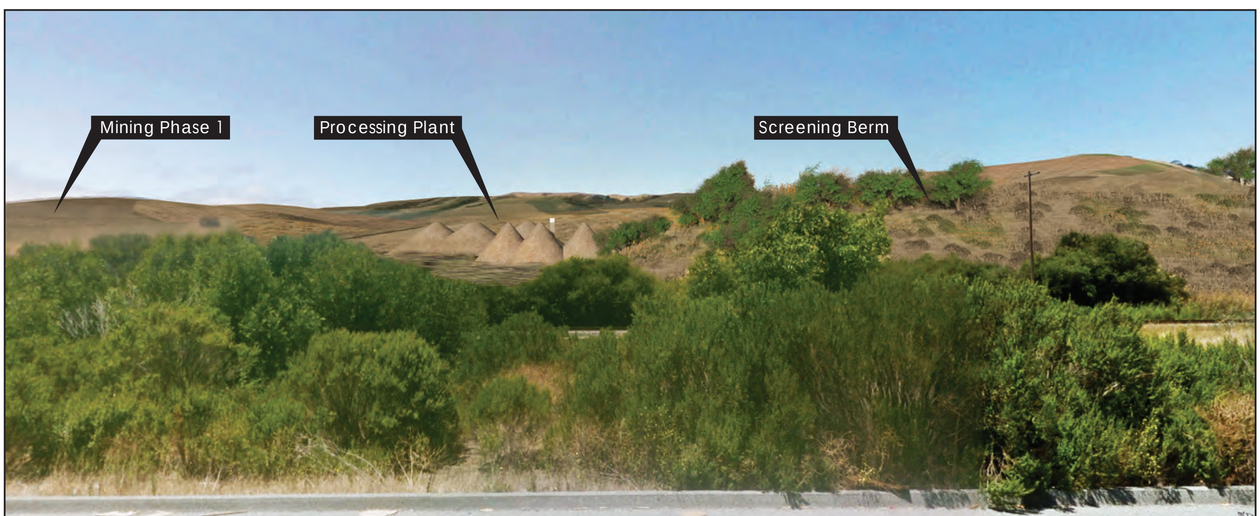
SOURCE: Digital Imaging Studio, 2018

SCC Sargent Quarry

Figure 3.2-7
Photosimulation View 4

ESA

Current



Interim

SOURCE: Digital Imaging Studio, 2018

Figure 3.2-8
Photosimulation View 5

ESA

3.2.4.2 Significance Criteria

Consistent with CEQA Guidelines Appendix G, the Project would result in a significant impact on 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 non-urbanized areas, substantially degrade the existing visual character or quality of public views 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.

Due to the nature of the Project, the following criteria are not analyzed in this section for the reasons described below:

- ***Have a substantial adverse effect on a scenic vista***. There are no designated scenic vistas in the vicinity of the Project site.

3.2.4.3 Project Impacts

Impact 3.2-1: The Project would alter the visual character of the Project site or scenic resources visible from US 101, a County-designated scenic highway. (Significant and Unavoidable)

This impact discussion corresponds to Significance Criteria (b) and (c).

As discussed above and shown in Table 3.2-1, the segments of U.S. 101 from which the Project site is visible are considered to be of moderate sensitivity to visual changes due to the high number of motorists combined with the short duration of views.

Construction

All Project Components

As described in Section 2.5, *Construction Activities and Assumption*, Project construction would include the construction of the screening berm, aggregate processing plant and associated facilities, access road improvements, and drainage facilities. These activities would require the presence of delivery trucks, vehicles, and construction equipment. Additionally, construction activities would require the use of storage, staging, and active work areas. More details regarding specific activities and equipment required are provided in Section 2.5 of the Project Description. The construction period would last 9 months and all activities associated with construction would be temporary.

Construction would introduce visual changes to the Project site, altering views from U.S. 101. Construction would result in the presence of heavy equipment, excavation and transport of dirt around the Project site, and the building of structures. These activities would be sequential, and each activity would be visible for a limited amount of time (for example construction of the processing plant would only be visible for about 4 weeks). The visual change associated with construction would not create a significant amount of contrast with the surrounding environment as the presence of large equipment, movement of soil, and construction of buildings would not differ substantially from the visual impact of large-scale agriculture operations and general construction along the U.S. 101 corridor and would not have a significant impact on scenic resources visible from U.S. 101.

One of the first activities would be to construct the screening berm, which would shield views of the Project site from U.S. 101. Therefore, during the initial stages, travelers along U.S. 101 would have unobstructed views of Project construction, but once the screening berm is completed, construction activity at the processing plant would be largely shielded from view of U.S. 101. However, construction activities would still be visible, particularly improvements to Old Monterey Road and U.S. 101. Riparian vegetation removed from Tar Creek to accommodate the bridge and road improvements would also alter views from southbound U.S. 101. Grassland and oak woodland vegetation along intermittent stream channels would be removed for construction.

Visual sensitivity along this section of U.S. 101 is moderate due to large number of viewers and varying sensitivity to visual change. Overall, visual impacts from construction would be **less than significant** as they would be temporary impacts and would result in a moderate amount of visual change.

Operation

Figure 3.2-4 through Figure 3.2-8 show the current views of the Project site, and the views of the Project during operation from each of the representative KOPs.

Phase 1 and Phase 2 Mining Areas

The base of the Phase 1 and Phase 2 hillsides are located approximately 0.3 mile from U.S. 101 at its nearest point. Views of the Phase 1 and Phase 2 mining areas and overburden storage areas, as well as the processing plant described above, would be the most visible components of the Project to vehicles/motorists traveling southbound on U.S. 101. The screening berm would be constructed from overburden. Therefore, in the initial phases of excavation, while overburden is being removed from mining areas, the screening berm will not yet be constructed and views of mining equipment on hillsides will be visible. Once constructed, the screening berm would block views from the freeway of mining excavation equipment and activities at the lower elevations of the hillsides. However, excavation activities would be visible on the upper slopes of hillsides as part of Phases 1 and 2. (as shown in Figure 3.2-7 and Figure 3.2-8). Phase 1 and Phase 2 would be mined from west to east, such that the existing hillsides facing U.S. 101 would block mining activities for several years of the estimated 23-year mining term at Phase 1 and Phase 2. The visibility of mining equipment and modification of the hillsides which are considered a scenic resource would result in a moderate to high change in the existing visual character of the Project site, which would be considered a substantial degradation in the quality of public views and scenic resources visible from U.S. 101.The impact of mining Phases 1 and 2 would be **significant**.

Phase 3 and Phase 4 Mining Areas and Conveyor Belt

Phase 3 and Phase 4 mining areas are located on two hilltops on either side of Sargent Creek at the southeast portion of the Project site (see Figure 3.2-3). Each of the mining areas would consist of an open pit with benches every 30 vertical feet on the side slopes. The mining areas would be elevated from vantage points along U.S. 101, since the mineable sand and gravel materials have been geologically uplifted by tectonic forces. The mining areas are approximately 0.25 miles from the southbound lanes of U.S. 101 and are approximately 300 feet higher in elevation than the highway.

Mining would occur from west to east with the actual hillside facing the freeway, blocking views of mining activities for the first few years of mining. The Phase 4 mining area would block views of the Phase 3 mining area. Further, the Phase 3 and 4 mining areas are separated by elevation and distance, obscuring views of mining activities from public vantage points on U.S. 101. Views also would be partially blocked by surrounding undisturbed hillslopes.

The proposed conveyor belt and maintenance road from the processing plant to the Phase 3 and Phase 4 mining areas would be located approximately 1,500 feet from U.S. 101. They would follow a route similar to an existing dirt access road to the Phase 3 and Phase 4 mining areas. The existing access road is not clearly visible from U.S. 101; thus, the elevated conveyor belt would also not be clearly visible except at points where it periodically crosses ridgelines. The distance of separation and intervening hillsides and topography would obscure clear views of this Project infrastructure from public vantage points on U.S. 101.

For the reasons above, the visual impacts of the Phase 3 and Phase 4 mining areas and conveyor belt would not substantially degrade the existing visual character or quality of public views of the Project site and its surroundings or scenic resources visible from U.S. 101. The impact of mining Phases 3 and 4 would be **less than significant**.

Processing Plant and Screening Berm

The processing plant would be the closest Project component to U.S. 101 (300 feet west). The processing plant area would include buildings, parking areas for vehicles, processing equipment (such as conveyors and radial stacker), and stormwater catchment ponds. The screening berm would be constructed and vegetated to screen views of these features. The screening berm and overburden stockpile are intended to comply with Section 4.10.370 of the County Code, which requires screening of excavation activities from scenic corridors. The screening berm would be constructed using overburden from Phase 1 mining and the construction of the berm would occur in tandem with the beginning of Phase 1 mining. The berm would be landscaped (hydroseeded) and graded to resemble the surrounding topography to the extent possible while still providing substantial screening. Within a season, the berm would be vegetated and within 1 year it would look similar to the surrounding hillsides, which contain mostly annual grasses. In the longer term, trees planted along the screening berm would grow, blending the view of the screening berm in with the surrounding landscape.

The berm would be graded to resemble the form and shape of the surrounding hills and would be planted to blend in with the surroundings (See for example, Figure 3.2-6). Nonetheless, initially it would appear constructed rather than natural. Additionally, during the Planning Commission review of the Project, the screening berm would be subject to Architecture and Site Approval and Design Review, which would consider the compatibility of the Project with the natural environment.

As demonstrated in Figures 3.2-5 through 3.2-8, the screening berm would block views of the majority of the processing plant site from drivers and passengers traveling along U.S. 101. However, from some viewing locations along U.S. 101 viewers would be able to see portions of the processing plant equipment and stockpiles (See Figures 3.2-4, 3.2-5, and 3.2-8) in a way that would create a visual contrast with the surrounding area.

In addition, from most viewing locations, the screening berm would block existing scenic resources such as the Sargent Hills. The visual quality of views from U.S. 101 under existing conditions is dependent on the overall impression of the rural agricultural development and rolling hills, as shown in Figures 3.2-6 through 3.2-8. The dominant scenic feature in views looking toward the Project site from U.S. 101 are the agricultural fields in the foreground and middle-ground and the Sargent Hills in the background. As shown in the photographic simulations on Figures 3.2-6 through 3.2-8, the screening berm would block these landscape features, creating a moderate to strong level of visual change compared to existing conditions. Additionally, the screening berm would dominate views along this section of U.S. 101.

Given the moderate level of visual sensitivity along U.S. 101 (see Table 3.2-1) and the high level of visual contrast and change, the processing plant and screening berm would have a substantial adverse effect on the visual character and quality of public views from U.S. 101. The impact of the processing plant and screening berm would be **significant**.

Roadway Improvements and Rail Spur

The rail spur would not be visible from U.S. 101 because it would be at grade and intervening topography would not afford views. The improvements to Old Monterey Road and U.S. 101 would occur within the current roadway configurations and would therefore not contrast with the existing views of roadways from U.S. 101. The roadway improvements would be at-grade and would not block any views of scenic resources. Because the roadway improvements would not substantially alter views from U.S. 101, and because the rail spur would not be visible from offsite, the impact of these components on visual resources would be **less than significant**.

Reclamation

Once mining is complete, earthmoving and recontouring would be undertaken as part of reclamation of each of the four mined areas. Slopes and benches would be planted with native grasses and oak trees under the proposed Reclamation Plan (Appendix B). The slopes would be graded and restored in order to blend in with the existing topography and vegetation to the extent possible, as described in the Reclamation Plan. Over time, reclamation of mined areas with final grading to conform to local topography and reclamation plantings would soften views of disturbed areas in conformance with County Mining Regulations and SMARA. Although reclamation activities would reclaim the Project site in a manner that would largely blend in with the surrounding landscape, there would be areas with benches and slopes that would not appear entirely natural, and the ultimate visual appearance of the hills on the Project site would differ substantially from existing conditions. While the goal of reclamation would be to recontour the Project site to resemble pre-Project conditions, it would not be feasible to match the topography of pre-Project conditions, as a substantial amount of soil and material will have been removed during mining.

In addition, the screening berm would remain in place after the conclusion of Project operation. The berm would block views of the Project site, including both areas that have been altered and those that remain in the existing state. Therefore, the extent of visual change that would be introduced by the reclaimed Project site would not be visible. However, as the screening berm would be permanent and would continue to block existing scenic resources, it cause a moderate to high level of visual change compared to existing conditions. Impacts would be **significant**.

Summary

Portions of the Project would be visible from U.S. 101, a County-designated scenic freeway. Construction activities associated with the processing plant and roadway improvements would be visible, but temporary. Once constructed, the screening berm would largely block views of the processing plant, but some equipment and stockpiles would remain visible from certain vantage points. At the conclusion of mining, the Project site would be recontoured and revegetated, resulting in a more natural appearing reclaimed landscape. However, the removal of the portions of hills during mining, and the benches and slopes resulting from reclamation would result in a landscape that differs from the existing condition. Therefore, the processing plant, and quarrying and reclamation activities at Phases 1 and 2 would result in a significant impact on the visual quality of views from U.S. 101. In addition, the screening berm would block views from the highway of both Project elements and portions of the natural landscape that would be untouched by Project activities. The blocking of views of the natural landscape also would be a substantial change in visual quality. For these reasons, the Project would have a **significant impact** on visual resources.

Once constructed, the roadway improvements and Phases 3 and 4 quarrying would not substantially alter views from U.S. 101, and therefore the impact from these components would be less than significant.

> **Mitigation Measure 3.2-1:** Once constructed, the Applicant shall contour the screening berm to resemble surrounding land features, to the extent possible, and shall plant fast-growing native vegetation. The screening berm shall either be extended around the northern portion of the processing plant, or fencing and vegetation shall be used to further screen views of the processing plant from southbound traffic on U.S. 101. Native vegetation and/or trees shall be planted around the northern portion of the processing plant to further screen views of the processing plant from viewpoints on southbound U.S. 101 that would not be blocked by the screening berm. The proposed final design for screening shall be reviewed by the County prior to construction in order to ensure that views of the processing plant are screened to the extent possible by a combination of the screening berm, fencing, and vegetation in order to achieve a natural appearance, to the extent possible.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure 3.2-1 would lessen the severity of impacts by further screening views of the mining operations and processing plant. Impacts resulting from extending the screening berm and additional fencing and vegetation around the northern portion of the processing plant would involve minor additional earth work and equipment operation, and would not substantially increase the amount of grading and equipment use for the Project. Ensuring that the screening berm is contoured to resemble surrounding topography and planted with fast-growing, native vegetation would reduce the visual contrast with the surrounding natural landscape. However, the screening berm itself would continue to block views of the Sargent Hills which are an important visual resource. Screening is necessary to reduce the visual contrast created by the mining equipment, processing plant, and quarries. Therefore, there is no additional feasible mitigation that could further reduce the visual impacts.

Impact 3.2-2: The Project could introduce a new source of substantial light or glare. (Less than Significant)

This impact discussion corresponds to Significance Criterion (d). None of the Project components would erect visible structures with highly reflective surfaces or locate light sources in areas that would create harsh glare. Therefore, the focus of the following analysis is on light, rather than glare.

Construction

All Project Components

Project construction would occur over a 9-month period within the hours of 7:00 a.m. and 5:00 p.m., Monday through Saturday. Construction lighting may be required during the late afternoon and early evening hours during the winter months. If so, construction lighting would be visible from U.S. 101 during this period of time. As described in Section 3.1.3, *Environmental Setting*, there are existing sources of light in the study area, including light from vehicles on U.S. 101 and surrounding agricultural and residential land uses. The lighting that would be introduced during construction would be temporary and would not introduce a substantial new source of light as compared to existing conditions. Impacts from lighting during Project construction would be **less than significant**.

Operation

Mining Pits, Conveyor Belts, Screening Berm, Access Roads, and Roadway Improvements

No new lighting would be installed along Old Monterey Road, U.S. 101 or the conveyor belts, on the screening berm, or in the mining areas. Mining would occur only during daylight hours. Therefore, there would be **no impact** from light in these areas.

Processing Plant

As described in Section 2.4.9, lighting would be installed at the processing plant. All lighting would comply with the Mine Safety and Health Administration regulations and the County Guidelines for Architecture and Site Approval (30 CFR Parts 1-199; County of Santa Clara 2020). Light fixtures would be a maximum of 12 feet tall. The majority of activities at the processing plant would occur during day light hours. Activities at the processing plant could begin as early as 4:30 a.m. each day, continuing until 5:00 p.m. Between 5:00 p.m. during the summer and early evening in the winter, and 4:30 a.m., all lighting would be turned off, except for some minor security lighting. During the winter months, some lighting might be necessary in the early morning or late afternoon hours.

Lighting would be visible primarily in the early morning or late afternoon hours during the winter months and in pre-dawn hours in the summer months. All lighting would be shielded and oriented downward (consistent with County Guidelines for Architecture and Site Approval) so as not to cause glare or result on spillover at adjacent properties or U.S. 101. Additionally, lighting at the processing plant would be shielded by the screening berm. As described in Section 3.1.3, *Environmental Setting*, existing sources of light in the vicinity of the Project site include light from vehicles on U.S. 101 and surrounding industrial, agricultural, and residential land uses. For these reasons, the lighting that would be introduced during operation would not introduce a substantial new source of light as compared to existing conditions, and the impact would be **less than significant**.

Rail Spur

The lights at the rail loading area would be used only when the rail cars are being connected to the train for transport and when empty cars are returned to the Project site. Lights along the rail line would be located where the spur connects to the main line, and approximately every 20 feet along the spur. These lights would be illuminated a maximum of 3 times a week, for approximately 30 minutes each time. As stated above, there are no adjacent properties or land uses that would be adversely affected by these lights. Furthermore, as with the processing plant, the lights would be screened from view of U.S. 101 by the 30-foot screening berm. Therefore, the impact of rail spur lighting on visual quality would be **less than significant**.

Reclamation

At the completion of the mining term, all lighting installed at the processing plant would be removed when the site is reclaimed. Some temporary lighting may be required during the process of reclamation. Lighting impacts from Project reclamation would be similar to the impacts from construction and would be **less than significant**. Once the Project site is reclaimed, lighting conditions would be restored to pre-Project conditions and there would be no remaining impact to the light or glare.

Mitigation: None required.

Significance after Mitigation: Less than significant.

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3.2.4.4 Cumulative Analysis

Impact 3.2-3: The Project would contribute to cumulative changes in visual character of public views from U.S. 101, a County-designated scenic highway. (Significant and Unavoidable)

The geographic scope of cumulative impacts on visual quality includes the viewsheds that would be affected by the Project, consisting of views from public areas such as major or scenic roadways, parks and recreational areas, and scenic vistas. As discussed above, there are no publicly accessible parks, trails or other recreational facilities with views of the Project site. Therefore, the cumulative context for this impact would be projects within the same viewshed as the Project. The only project identified in Section 3.1 located within the viewshed of the Project is the U.S. 101 Widening Project, which would be located adjacent to the east and south of the Project site.

As disclosed in the 2013 EIR for the U.S. 101 Widening Project, visual impacts attributable to that project were determined to be less than significant for all viewpoints considered in the analysis except for a sensitive viewpoint at the intersection of U.S. 101 and Castro Valley Road approximately 3 miles to the north of the Project site. At this location, the impacts of the widening project on aesthetics were determined to be significant because views of the Diablo Mountains would be blocked by the proposed interchange once constructed (SCVTA 2013). From this sensitive viewpoint, distance and intervening topography would block views of the Project site. However, given driving speeds of 65 mph, these two projects would be viewed in quick succession for drivers along U.S. 101. Therefore, the cumulative impact would be significant.

The Project would contribute to the significant cumulative impacts along the U.S. 101 view corridor because the visual changes resulting from the U.S. 101 widening would be visible shortly before or after the Project site comes into view (depending on whether one is traveling north or south on U.S. 101). Because the changes in visual quality attributable to the Project would be long-term, irreversible, and of moderate to strong level of visual contrast, the Project's contribution to this cumulative impact would be considerable, and therefore **significant**.

> **Mitigation Measure 3.2-3**: Implement Mitigation Measure 3.2-1.
>
> **Significance After Mitigation:** Significant and Unavoidable. As discussed in Impact 3.2-1, mitigation would reduce the impact but not to a less-than-significant level.

Impact 3.2-4: The Project could contribute to cumulative increases in light and glare. (Less than Significant)

As discussed above, the Project would have no impacts on glare, and therefore would not contribute to cumulative increases in glare.

The only project identified in Section 3.1 located within the same viewshed as the Project is the U.S. 101 Widening Project, which would be located adjacent to the east and south of the Project site. The widening project could result in temporary construction lighting. Existing light sources along U.S. 101 include lights from cars traveling along U.S. 101 and other local roads as well as lighting due to industrial, agricultural, and residential uses. Given the numerous existing sources of light, the addition of light from the widening project would not be significant.

As discussed in Impact 3.2-2 and above, there are existing sources of light in the vicinity of the Project site. While the Project would introduce new sources of lighting into the Project area, the light sources would be largely screened from view by the screening berm and used for limited durations. Project lighting footprints would not overlap with construction lighting for the U.S. 101 Widening Project, so the lighting effects of the widening project would not be exacerbated by the light from the processing plant or rail spur. Therefore, cumulative impacts on lighting would be less than significant, the Project contribution to cumulative increases in light in the vicinity of the Project site would not be considerable, and the impact would be **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant.

3.2.5 References

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3.3 Air Quality

3.3.1 Introduction

This section evaluates the impacts of the Project on regional and local air quality from both stationary and mobile sources of air pollutant emissions. The following discussion is based on a review of existing air quality regulations and on an air quality calculations prepared by Illingworth & Rodkin, Inc. (2021). Calculation tables and model output from that analysis are included as Appendix D to this EIR.

3.3.1.1 Criteria Pollutants

The Project site is located within the San Francisco Bay Area Air Basin (SFBAAB). Air quality in the SFBAAB is assessed for seven common air pollutants (referred to as criteria pollutants), including ground-level ozone (O_3), nitrogen dioxide (NO_2), fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), particulate matter less than 10 microns in diameter (PM_{10}), carbon monoxide (CO), sulfur dioxide (SO_2), and lead.[1] Criteria pollutants are regulated because they result in health effects.

The sources of criteria pollutants and their associated health effects are summarized in **Table 3.3-1** and discussed below. Among the pollutants that may be generated by the Project, those of greatest concern are emitted by off-road equipment and truck traffic. These pollutants include $PM_{2.5}$ and PM_{10}, and the ozone precursors nitrogen oxides (NO_x) and reactive organic gases (ROG).

TABLE 3.3-1
HEALTH EFFECTS OF CRITERIA POLLUTANTS

Pollutants	Sources	Primary Effects
Ground-level Ozone (O_3)	Atmospheric reaction of reactive organic gases with nitrogen oxides in sunlight	• Aggravation of respiratory and cardiovascular diseases • Irritation of eyes • Cardiopulmonary function impairment
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust, high temperature stationary combustion, atmospheric reactions	• Aggravation of respiratory illness • Reduced visibility
Fine Particulate Matter ($PM_{2.5}$) and Coarse Particulate Matter (PM_{10})	Stationary combustion of solid fuels, construction activities, industrial processes, atmospheric chemical reactions	• Reduced lung function, especially in children • Aggravation of respiratory and cardiorespiratory diseases • Increased cough and chest discomfort • Reduced visibility

SOURCE: CARB 2021e.

[1] The area has attained both state and federal ambient air quality standards for CO. The Project does not include substantial new emissions of sulfur dioxide or lead. These criteria pollutants are not discussed further.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NO_X in the presence of sunlight. The main sources of ROG and NO_X, often referred to as ozone precursors, are the evaporation of solvents, paints, and fuels and combustion processes (including motor vehicle engines). In the Bay Area, automobiles are the single largest source of ozone precursors.

According to USEPA and CARB, ozone can cause the muscles in the airways to constrict, potentially leading to wheezing and shortness of breath. Exposure to ozone can:

- Make it more difficult to breathe deeply and vigorously;
- Cause shortness of breath and pain when taking a deep breath;
- Cause coughing and sore or scratchy throat;
- Inflame and damage the airways;
- Aggravate lung diseases such as asthma, emphysema, and chronic bronchitis;
- Increase the frequency of asthma attacks;
- Make the lungs more susceptible to infection;
- Continue to damage the lungs even when the symptoms have disappeared; and
- Cause chronic obstructive pulmonary disease (COPD).

Long-term exposure to ozone is linked to aggravation of asthma and is likely to be one of many causes of asthma development. Exposure to higher concentrations of ozone may also be linked to permanent lung damage, such as abnormal lung development in children. USEPA states that the people most at risk from breathing air containing ozone include those with asthma, children, older adults, and people who are active outdoors, especially outdoor workers (USEPA 2018, CARB 2019a).

Nitrogen Dioxide and Oxides of Nitrogen

NO_2 is a reddish brown gas that is a byproduct of combustion processes, which emit NO_x. Automobiles and industrial operations are the main sources of NO_2. NO_2 may be visible as a coloring component of a brown cloud on high-pollution days, especially in conjunction with high ozone levels. Nitrogen dioxide is a major component of the group of gaseous nitrogen compounds commonly referred to as NO_X, which also includes nitric oxide (NO).

Nitrogen dioxide is of concern for air quality because it acts as a respiratory irritant and is a precursor of ozone. Short-term exposures can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms such as coughing, wheezing, or difficulty breathing. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections, requiring hospital admissions and visits to emergency rooms.

Infants and children are particularly at risk from exposure to NO_2 because of their more rapid breathing rate for their body weight and their typically greater duration of outdoor exposure. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and COPD (CARB 2019b).

Particulate Matter

PM_{10} and $PM_{2.5}$ consist of particulate matter that is 10 micrometers or less in diameter and 2.5 micrometers or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of PM that can be inhaled into the air passages and the lungs and can cause adverse health effects, particularly at levels above the federal and state ambient air quality standards. Some sources of PM, such as wood burning in fireplaces, demolition, and construction activities, are more local, while others, such as vehicular traffic, have a more regional effect. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health because these particles are so small and thus can penetrate to the deepest parts of the lungs.

A large body of scientific evidence indicates that both long-term and short-term exposure to $PM_{2.5}$ can cause a wide range of health effects (e.g., aggravating asthma and bronchitis), causing visits to the hospital for respiratory and cardiovascular symptoms, and contributing to heart attacks and deaths. Children are more susceptible to the health risks of PM_{10} and $PM_{2.5}$ because their immune and respiratory systems are still developing. Recent studies have shown an association between morbidity and mortality and daily concentrations of PM in the air (CARB 2019c).

3.3.1.2 Toxic Air Contaminants

Diesel Particulate Matter

Toxic air contaminants (TACs) are a broad class of compounds known to have health effects. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, diesel fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway).

The California Air Resources Board (CARB) estimates that DPM represents about three-quarters of the cancer risk from TACs. Diesel exhaust is a complex mixture of gases, vapors, and fine particles. Medium- and heavy-duty diesel trucks represent the bulk of DPM emissions from California highways. The majority of DPM is small enough to be inhaled into the lungs. Most inhaled particles are subsequently exhaled, but some deposit on the lung surface or are deposited in the deepest regions of the lungs, which are most susceptible to injury (CARB 2021a). Chemicals in diesel exhaust, such as benzene and formaldehyde, previously have been identified as TACs by CARB.

Naturally Occurring Asbestos and Crystalline Silica

Crystalline silica is a component of soil, sand, granite, and many other minerals and has been associated with potential respiratory health effects. Respirable-sized particles of crystalline silica may be formed when workers chip, cut, drill, or grind the base materials that contain it. If the base rock material at a quarry contains crystalline silica, the fugitive dust generated during quarrying activities may contain crystalline silica. If respirable crystalline silica dust enters the lungs it can cause the formation of scar tissues (silicosis), which can be disabling or even fatal, reducing the lungs' ability to take in oxygen and increasing the susceptibility to lung infections. The non-crystalline form of silica (amorphous silica) is not nearly as toxic, since it usually does not cause silicosis. Crystalline silica has been identified as a TAC with chronic non-cancer health effects by the California Office of Health Hazard Assessment (OEHHA 2008). OEHHA has established an acceptable exposure level for crystalline silica's potential health effect.

The likelihood of naturally occurring asbestos (NOA) at the Project site is based on a California Department of Conservation map showing areas where ultramafic rocks that are most likely to contain NOA have been identified (California Department of Conservation, Department of Mines and Geology 2000). This map indicates that there is not likely to be ultramafic rock in the Project area.

3.3.2 Regulatory Setting

Air quality and air pollution sources are regulated by federal, state, regional, and local regulatory agencies. Air quality regulations provide the standards by which air quality is measured and institute controls on air pollution sources to improve air quality. The federal Clean Air Act established the national ambient air quality standards and delegated the enforcement of air pollution control regulations to the states. CARB develops and enforces air regulations for California but delegates the responsibility of stationary emission source regulation to local air pollution control agencies. The Bay Area Air Quality Management District (BAAQMD) is responsible for air pollution source regulation for the Project site and vicinity. Mobile sources of air pollutant emissions are regulated on a state-wide basis by CARB. The air pollutants of concern and the roles of the agencies primarily responsible for managing the air quality within the Project site and vicinity. Relevant air quality regulations are further discussed below.

3.3.2.1 Federal

At the federal level, the U.S. Environmental Protection Agency (USEPA) oversees implementation of the Clean Air Act and its subsequent amendments. The federal Clean Air Act requires the USEPA to set national ambient air quality standards (NAAQS) for the seven common criteria pollutants, including $PM_{2.5}$, PM_{10}, O_3, CO, SO_2, NO_x, and lead. See Table 3.3-2. The federal Clean Air Act was established to assure that acceptable levels of air quality are maintained in all areas of the United States. Air quality is characterized by the presence of pollutants that fall into two basic categories: criteria air pollutants and toxic or hazardous air contaminants. Criteria air pollutants refer to a group of pollutants that the regulatory agencies have adopted ambient air quality standards and pollution management and control strategies. Toxic or hazardous air contaminants refer to a category of air pollutants that have potential adverse health effects but do not have an associated ambient air quality standard. These pollutants are called hazardous air pollutants (HAPs) in federal law and TACs in California law.

Each state is divided into air basins based on topographic, geographic, and meteorological conditions. Each air basin is then assessed to determine if the area meets the National Ambient

Air Quality Standards (NAAQS). Air basins or portions thereof have been classified as either "attainment" or "nonattainment" for each criteria air pollutant based on whether compliance with the standards has been achieved.

If an area does not meet the NAAQS over a set period of time, the USEPA designates the area as a "nonattainment" area for that particular pollutant and sets deadlines for bringing the area into compliance with the standards. These deadlines vary by pollutant, the current level of air pollution in the air basin, and the ability of each region to meet the deadline. The USEPA requires states that have areas that are not in compliance with the NAAQS to prepare and submit air quality plans showing how and when the standards will be met. These plans are referred to as State Implementation Plans (SIPs). If the states cannot show how the standards will be met, then they must show progress toward meeting the standards.

Stationary Source Requirements

The Clean Air Act authorizes USEPA to adopt regulations specifying pollutant levels that may be emitted from newly constructed stationary sources. These regulations, called New Source Performance Standards (NSPS), are implemented for different categories of stationary emission sources. One such NSPS regulation has been promulgated for non-metallic mineral processing operations (40 CFR 60 Subpart OOO), which includes rock and sand and gravel quarry operations. This performance standard includes particulate matter emission limitations and visible emissions (opacity) limits for point and fugitive sources at quarries and other facilities. The regulation applies to various equipment components at quarries including crushers, grinders, screening operations, belt conveyors, and storage bins that were constructed, reconstructed, or modified after 1983. Equipment at the Sargent Quarry would be subject to these requirements.

The Clean Air Act also requires stationary sources that emit or may emit large quantities of pollutants (called "major sources") to obtain a federally enforceable permit to operate, called a Title V permit or a Part 70 permit, which is implemented and enforced by the local air agency, in this case the BAAQMD. A major source is defined as a source that emits or has the potential to emit either 100 tons per year or more of any criteria pollutant, ten tons per year of any single Hazardous Air Pollutant (HAP), or 25 tons per year of any combination of HAPs. The USEPA's Prevention of Significant Deterioration (PSD) permitting program also applies to major stationary sources. For sources like the Project, the PSD major source emissions threshold for criteria pollutants is 250 tons per year (40 CFR Section 52.21).

The Project would not be a major source under the PSD or Title V permit regulations because the proposed increase in quarry production levels would result in emissions that would be below the major source emission thresholds.

Mobile Source Control Measures – Diesel Engines

In addition to setting emission standards for stationary sources, the USEPA sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such as trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The

USEPA also sets nationwide fuel standards. California also has the ability to separately set motor vehicle emission standards and standards for fuel used in California, as long as they are the same or more stringent than the Federal standards.

In the past decade, the USEPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of particulate matter (PM_{10} and $PM_{2.5}$) and because the USEPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to substantially reduce PM and NO_x emissions from diesel engines when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards (USEPA 2021).

In concert with the diesel engine emission standards, the USEPA has substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The new standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel (from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel, is currently required for use by all vehicles in the U.S. All of the above federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

Light-Duty Vehicle Greenhouse Gas and Corporate Average Fuel Economy Standards

In addition to setting emission standards for stationary sources, the USEPA sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such as trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The USEPA also sets nationwide fuel standards, such as the Corporate Average Fuel Economy (CAFE) standards (adopted in 2010) that require improved fuel economy and lower pollutant emissions.

In 2018, the USEPA and the U.S. Department of Transportation’s National Highway Traffic Safety Administration (NHTSA) proposed the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One and Part Two. Part One revoked California’s authority to set its own fuel economy standards and zero-emission vehicle mandate, and Part Two increased the fuel economy standards (84 Federal Register 51,310 for Part One and 85 Federal Register 24, 173 for Part Two).

On April 22, 2021, NHTSA proposed to formally roll back portions of the SAFE Rule, thereby restoring California’s right to set more stringent fuel efficiency standards. NHTSA is also planning to issue a new rule to increase the national fuel economy standard for light duty vehicles beyond those in Part Two of the SAFE Vehicles Rule (Federal Register 2021).

3.3.2.2 State

CARB is the state agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California Clean Air Act. USEPA and CARB have adopted ambient air quality standards establishing permissible levels of these pollutants to protect public health and the climate, shown in Table 3.3-2. Violations of ambient air quality standards are based on air pollutant monitoring data and are determined for each air pollutant. Attainment status for a pollutant standard means that a given air district meets the given standard set by USEPA and/or CARB.

Air pollution in California is regulated under the provisions of the California Clean Air Act. These statutes provide the basis for implementing the federal Clean Air Act. CARB is responsible for establishing and reviewing the State standards, compiling the California SIP, securing approval of that plan from USEPA, and identifying toxic air contaminants. CARB also regulates mobile emission sources in California, such as construction equipment, trucks, and automobiles. The California Clean Air Act divides implementation responsibility between CARB and local or regional agencies called air quality management districts or air pollution control districts. The BAAQMD is the regional air quality district with jurisdiction over the Project, responsible for bringing and/or maintaining air quality within federal and state air quality standards. This includes the responsibility to monitor ambient air pollutant levels and to develop and implement attainment strategies to ensure that future emissions will be within standards. The air districts are primarily responsible for implementing and enforcing federal and state regulations for stationary sources at industrial and commercial facilities within their jurisdictions and for preparing the regional air quality plans that are required under the federal Clean Air Act and California Clean Air Act. The regional air quality plans prepared by districts throughout the State are compiled by CARB to form the California SIP. The local air districts also have the responsibility and authority to adopt transportation control measures and emission reduction programs for indirect and area-wide emission sources.

CARB oversees air district regulation of stationary sources and is the agency primarily responsible for controlling air pollution from mobile sources in California. Regulations have been adopted by both USEPA and CARB that set specific emission standards for vehicles. As older vehicles are retired and replaced with newer, cleaner vehicles (called “fleet turnover”), the air quality will improve. Therefore, most air quality planning documents forecast reduced vehicle emissions in the future.

State Criteria Air Pollutants

The California Clean Air Act outlines a program for areas in the state to attain the California Air Quality Standards (CAAQS) by the earliest practical date. The California Clean Air Act sets more stringent air quality standards, as shown in **Table 3.3-2**, for most of the pollutants covered under the federal standards. Additionally, California has adopted ambient air quality standards for vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. In a manner similar to the Federal requirements, the California Clean Air Act requires designation of attainment and nonattainment areas with respect to CAAQS. The California Clean Air Act also requires that local and regional air districts prepare a Clean Air Plan (CAP) if the State air quality standards for

CO, SO_2, NO_2, or ozone are violated in their district. These CAPs include information on existing air quality in the region, an inventory of current and forecasted future emissions, emission reductions required to meet the standards, and the control measures required to achieve the emission reduction. The CAP must show satisfactory progress in attaining the State air quality standards. The California Clean Air Act requires that the State air quality standards be met as expeditiously as practicable but unlike the federal Clean Air Act, does not set precise attainment date deadlines. Instead, the act established increasingly stringent requirements for areas that will require more time to achieve the standards.

TABLE 3.3-2
STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS AND THE SFBAAB'S ATTAINMENT STATUS

Pollutant	Averaging Time	National Standards		California Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	1 hour	—	—	0.09 ppm	Nonattainment
	8 hours	0.070 ppm	Nonattainment	0.070 ppm	Nonattainment
Carbon Monoxide	1 hour	35 ppm	Attainment	20 ppm	Attainment
	8 hours[a]	9 ppm	Attainment	9.0 ppm	Attainment
Nitrogen Dioxide	1 hour	0.100 ppm	Unclassified	0.18 ppm	Attainment
	Annual Avg.	0.053 ppm	Attainment	0.030 ppm	Attainment
Sulfur Dioxide	1 hour	0.075 ppm	Attainment	0.25 ppm	Attainment
	24 hours	0.14 ppm	Attainment	0.04 ppm	Attainment
	Annual Avg.	0.030 ppm	Attainment	—	—
Respirable Particulate Matter (PM_{10})	24 hours	150 μg/m^3	Unclassified	50 μg/m^3	Nonattainment
	Annual Avg.	—	—	20 μg/m^3	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	24 hours	35 μg/m^3	Nonattainment	—	—
	Annual Avg.	12 μg/m^3	Unclassified/ Attainment	12 μg/m^3	Nonattainment
Lead	Monthly Avg.	—	—	1.5 μg/m^3	Attainment
	Quarterly	1.5 μg/m^3	Attainment	—	—
Hydrogen Sulfide	1 hour	—	—	0.03 ppm	Unclassified
Sulfates	24 hours	—	—	25 μg/m^3	Attainment
Visibility-Reducing Particles	8 hours	—	—	Extinction of 0.23/km; visibility of 10 miles or more	Unclassified
Vinyl Chloride	24 hours	—	—	0.010 ppm	—

NOTES:

μg/m^3 = micrograms per cubic meter; Avg. = Average; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ppb = parts per billion; ppm = parts per million

a. A more-stringent 8-hour carbon monoxide state standard exists around Lake Tahoe (6 ppm).

SOURCE: BAAQMD 2017a.

The SFBAAB is considered a nonattainment area for ground-level ozone and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered nonattainment for PM_{10} under the California Clean Air Act, but not the Federal Clean Air Act. The area has attained both State and Federal ambient air quality standards for CO. As part of an effort to attain and maintain ambient air quality standards for ozone, $PM_{2.5}$, and PM_{10}, BAAQMD has established thresholds of significance for air pollutants associated with projects subject to California Environmental Quality Act (CEQA) review (BAAQMD 2017c). Table 3.3-2 summarizes federal and state ambient air quality standards, as well as the attainment status of the air basin for each of these pollutants.

Toxic Air Contaminants

TACs are regulated at the regional, state, and federal level because chronic exposure can result in adverse health effects. The identification, regulation, and monitoring of TACs is relatively new compared to that for criteria air pollutants that have established ambient air quality standards. TACs are regulated or evaluated on the basis of risk to human health rather than comparison to an ambient air quality standard or emission-based threshold.

CARB Truck and Bus Regulation

The Truck and Bus Regulation is necessary to meet federal attainment standards. This regulation requires heavy-duty diesel vehicles that operate in California to reduce DPM and NO_x emissions from their exhaust. Therefore, by January 1, 2023, nearly all trucks and buses will be required to have 2010 or newer model year engines to reduce DPM and NO_x emissions. To help ensure that the benefits of this regulation are achieved, starting in 2020, only vehicles compliant with this regulation are registered by the California Department of Motor Vehicles (CARB 2021b).

CARB also adopted and implemented regulations to reduce DPM and NO_x emissions from existing and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks) through its off-road diesel vehicle regulation, approved in 2007 and revised in 2016 (CARB 2016). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower or greater. The regulations are intended to reduce particulate matter and NO_x exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent federal off-road equipment engine emission limits for new vehicles, will reduce emissions of DPM and NO_x.

CARB Advanced Clean Cars Program for Light Duty Vehicles

Advanced Clean Cars combines the control of smog-causing (criteria) pollutants and GHG emissions into a single coordinated package of regulations: the Low-Emission Vehicle (LEV) regulation for criteria and GHG emissions, and a technology forcing regulation for zero-emission vehicles (ZEV) that contributes to both types of emission reductions.

Advanced Clean Cars I was first adopted by CARB in 2012, including LEV III Criteria, LEV III GHG, and ZEV regulation amendments. The LEV III GHG component was developed in coordination with the USEPA and NHTSA for One National Program to harmonize GHG and fuel economy standards. Advanced Clean Cars II is currently in process to establish the next set of LEV and ZEV requirements to contribute to meeting federal ambient air quality ozone standards and California's carbon neutrality targets (CARB 2021d).

Asbestos Toxic Air Control Measure

In 2001, CARB adopted an Asbestos Airborne Toxic Control Measure (ATCM) for construction, grading, quarrying, and surface mining operations (CARB 2021c). Emission control measures, such as the use of dust suppressants, apply to activities such as road construction and road maintenance, construction, grading, quarrying, and surface mining operations in areas with naturally occurring asbestos/serpentine rock. The BAAQMD enforces the requirements of the asbestos ATCM. The BAAQMD may grant an exemption to the ATCM requirements if a geological evaluation demonstrates that ultramafic rock or serpentine is not likely to be found in the area.

3.3.2.3 Regional

Bay Area Air Quality Management District

BAAQMD is primarily responsible for ensuring that the federal and state ambient air quality standards are attained in the SFBAAB. The agency also is responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities.

BAAQMD has jurisdiction over the SFBAAB, with boundaries encompassing all or portions of nine counties: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Napa, Solano (southwestern portion), and Sonoma (southern portion). The Project site, located in Santa Clara County, is in BAAQMD's jurisdiction.

The BAAQMD has permit authority over most types of stationary equipment that would be used for the Project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized. Prior to the proposed quarry operations, an Authority to Construct and Permit to Operate must be obtained from the BAAQMD for all applicable processing equipment, etc.

The facility and its emission sources would be subject to BAAQMD rules and regulations contained in the most recent version of the Rules and Regulations of the BAAQMD. BAAQMD rules and regulations that may apply to environmental considerations for permitting the Project include:

- **Regulation 1 – Public Nuisance.** Prohibits discharge from any source whatsoever such quantities of air contaminants or other material, including those that cause odors, which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or that cause or have a natural tendency to cause injury or damage to business or property.

- **Regulation 2, Rule 2 – Permits and New Source Review.** Requires all new and modified sources of air pollution to obtain authorization to construct and operate and outlines the requirements for obtaining a permit. For sources with pollutants that are emitted in significant amounts, an evaluation of best available control technology (BACT) is required to reduce pollutant emissions using controls that have been successfully utilized, are technologically feasible, and cost-effective. Offsets also would be required for ozone precursors that exceed 10 tons per year, wherein an equal or greater amount must be reduced either at the facility or within the air basin.
- **Regulation 6 – Particulate Matter.** Limits the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity.
- **Regulation 7-102 – Citizen Complaints.** This regulation applies when the BAAQMD receives odor complaints from ten or more citizens within a 90-day period.

Regulation 10 – New Source Performance Standards. Requires new sources or modifications to existing sources to comply with the rules, standards, criteria, and requirements of 40 CFR Part 60 (NSPS). The Project would be subject to the requirements of NSPS Subpart OOO for Non-metallic Materials Processing Plants. This performance standard includes particulate matter emission limitations and visible emissions (opacity) limits for point and fugitive sources at quarries and other facilities. The regulation applies to various equipment components at quarries including crushers, grinders, screening operations, belt conveyors, and storage bins, that were constructed, reconstructed, or modified after 1983. Project equipment would be subject to these requirements.

2017 Clean Air Plan

BAAQMD is the lead agency in developing plans described above to address attainment and maintenance of the NAAQS and CAAQS. BAAQMD's most recently adopted plan is the Bay Area 2017 Clean Air Plan (2017 CAP). The 2017 CAP focuses on two related BAAQMD goals: protecting public health and protecting the climate. To protect public health, the 2017 CAP describes how BAAQMD will continue its progress toward attaining state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the 2017 CAP includes control measures designed to reduce emissions of methane and other potent GHGs in the near-term, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion (BAAQMD 2017b).

CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines provide thresholds and methodology for evaluating air quality impacts for projects and plans in the SFBAAB. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures (BAAQMD 2017c).

North Central Coast Air Basin

The Monterey Bay Air Resources District (MBARD), within the North Central Coast Air Basin (NCCAB), has jurisdiction over San Benito and Monterey counties, which are south of the Project site. The NCCAB is adjacent to the SFBAAB, and some of the Project trucks would travel into the NCCAB. The North Central Coast Air Basin is considered nonattainment for state by CARB for ozone and PM_{10} standards. As a result, the MBARD has established significance thresholds for ozone precursor pollutants and PM_{10}. Significance thresholds for emissions generated in the NCCAB are discussed in Section 3.3.4.1 below.

3.3.2.4 Local

Santa Clara County General Plan

Section G of the Health Element of the Santa Clara County General Plan (County of Santa Clara 2015) addresses Air Quality and Climate Change. This element includes several air quality related policies that pertain to this Project:

> ***Policy HE-G.1:*** Air quality environmental review. Continue to utilize and comply with the Air District's project- and plan-level thresholds of significance for air pollutants and greenhouse gas emissions.
>
> ***Policy HE-G.2:*** Coordination with regional agencies. Coordinate with the Air District to promote and implement stationary and area source emission measures.
>
> ***Policy HE-G.3:*** Fleet upgrades. Promote Air District mobile source measures to reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment, and by expanding the use of zero emission and plug-in vehicles.
>
> ***Policy HE-G.4:*** Off-road sources. Encourage mobile source emission reduction from off-road equipment such as construction, farming, lawn and garden, and recreational vehicles by retrofitting, retiring and replacing equipment and by using alternate fuel vehicles.
>
> ***Policy HE-G.7:*** Sensitive receptor uses. Promote measures to protect sensitive receptor uses, such as residential areas, schools, day care centers, recreational playfields and trails, and medical facilities by locating uses away from major roadways and stationary area sources of pollution, where possible, or incorporating feasible, effective mitigation measures.

3.3.3 Environmental Setting

3.3.3.1 Summary of Air Quality Monitoring Data

As stated above, the Project site is located in the SFBAAB. BAAQMD monitors air quality conditions at more than 30 locations throughout its jurisdiction. The closest monitoring stations to the Project site are in San José and Gilroy. The Gilroy station only measures O_3 and $PM_{2.5}$. Summarized air pollutant data for these stations are provided in **Table 3.3-3**. This table shows the highest air pollutant concentrations measured from 2018 through 2020.

Measured levels of O_3 and particulate matter (i.e., PM_{10} and $PM_{2.5}$) in the SFBAAB exceed ambient air quality standards based on the monitoring data presented in Table 3.3-3. In Gilroy, the state 1-hour O_3 standard was exceeded once per year in 2018 and 2020, and the national and state 8-hour standards were exceeded three times in 2020. PM_{10} levels monitored in San José exceeded the state annual average standard in 2018 and 2020 and the state 24-hour standard four days in 2018 and 2019 and 10 days in 2020. $PM_{2.5}$ levels exceeded the national standards 12 measurement days in Gilroy in 2018 and 14 days in 2020. PM_{10} and $PM_{2.5}$ are only measured once every six days, in accordance with a national sampling schedule set by USEPA.

TABLE 3.3-3
SUMMARY OF AIR QUALITY MONITORING DATA (2017–2019)

Pollutant	Standard	2018	2019	2020
Ozone (O_3) – Gilroy 9th Street Monitoring Station (Approximately 5.5 miles from the Project Site)				
Maximum 1-hour concentration, ppm	0.09[a]	**0.097**	0.079	**0.104**
Number of days above State 1-Hour standard		1	0	1
Maximum 8-hour concentration (National), ppm[d]	0.070	0.065	0.067	**0.084**
Number of days above National/State 8-Hour standard		0	0	3
Nitrogen Dioxide (NO_2) – San José Knox Avenue Monitoring Station (Approximately 33 miles from the Project Site)				
Annual average concentration, ppm[d]	0.053 / 0.030	0.017 / 0.016	0.014 / 0.014	0.014 / 0.013
Maximum 1-Hour concentration (National/State), ppm[d]	0.100 / 0.18	0.088 / 0.088	0.065 / 0.065	0.056 / 0.056
Number of days above National/State 1-Hour standard		0 / 0	0 / 0	0 / 0
Respirable Particulate Matter (PM_{10}) – San José Jackson Street Monitoring Station (Approximately 35 miles from the Project Site)				
Annual average concentration, μg/m³	20 [a]	**23.1**	19.1	**24.8**
Maximum 24-Hour concentration, μg/m³ [d]	150 / 50	115.4 / **121.8**	75.4 / **77.1**	134.9 / **137.1**
Number of days above National/State 24-Hour standard [c]		0 / 4	0 / 4	0 / 10
Fine Particulate Matter ($PM_{2.5}$) – Gilroy 9th Street Monitoring Station (Approximately 5.5 miles from the Project Site)				
Annual average concentration (National/State), μg/m³ [d]	12.0 / 12	7.7 / 7.9	8.5 / 5.8	9.9 / 9.9
Maximum 24-Hour concentration, μg/m³	35[b]	**97.5**	21.3	**102.5**
Number of days above National 24-Hour standard[c]		12	0	14

NOTES:

Number of days exceeded is for all days in a given year, except for particulate matter. PM_{10} and $PM_{2.5}$ are monitored every three days. Ozone and $PM_{2.5}$ monitoring data from Gilroy 9th Street monitoring station; NO_2 and CO monitoring data from the San José Knox Avenue monitoring station; PM_{10} monitoring data from the San José Jackson Street monitoring station.

Bold values are in excess of applicable standard.
-- indicates data was not available
ppm = parts per million; μg/m³ = micrograms per cubic meter.

a. State standard, not to be exceeded.
b. National standard, not to be exceeded.
c. Particulate matter sampling schedule of one out of every 3 days, for a total of approximately 122 samples per year. Estimated days exceeded mathematically estimates of how many days' concentrations would have been greater than the level of the standard had each day been monitored.
d. Maximum and annual concentrations may differ because the CARB and US EPA use different methods to calculate the emissions for certain criteria air pollutants for comparisons to the state and national standards.

SOURCE: CARB 2021c

3.3.3.2 Geography and Climate

The SFBAAB is characterized by its Mediterranean type climate with warm, dry summers and cool, wet winters. The Project site is located within the Santa Clara Valley, which is bounded by relatively high hills to the west and east but is open to the San Francisco Bay to the north, where marine air can easily penetrate the valley, and to the south, where emissions can migrate to California's Central Valley.

The topography in the vicinity of the Project site influences both the climate and air pollution potential. As an inland valley, Santa Clara Valley has generally lighter winds and a higher frequency of calm conditions when compared to the greater SFBAAB. Air pollutant emissions from upwind-urbanized areas are still on occasion transported with a southerly wind flow from the Bay Area or a northerly wind flow from Monterey Bay. The occurrence of episodes of high atmospheric stability, known as inversion conditions, severely limit the ability of the atmosphere to disperse pollutants vertically and are particularly prevalent in the summer months.

3.3.3.3 Sensitive Receptors

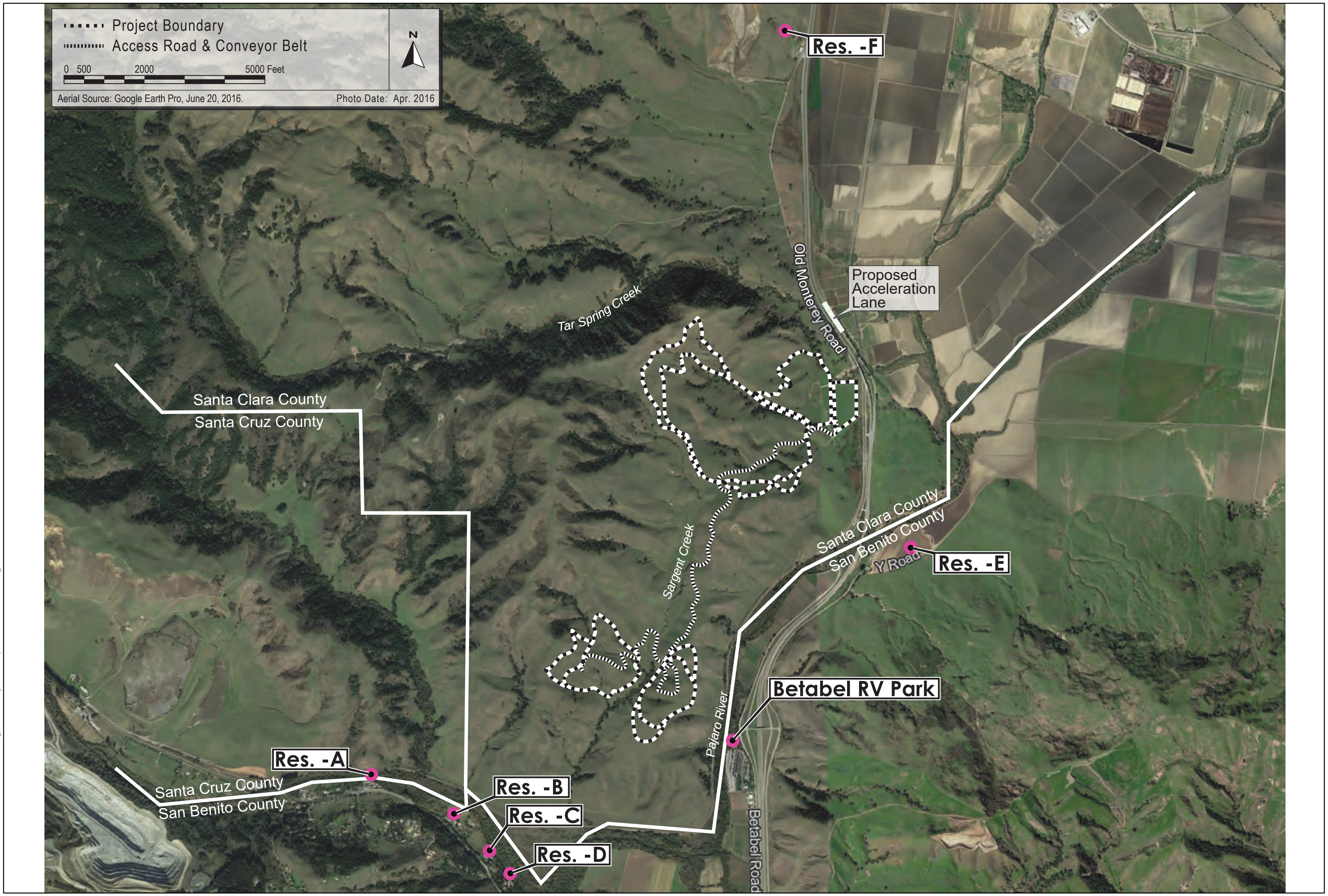
Sensitive receptors are groups of people more affected by air pollution than others. CARB has identified children under 16, people over 65, athletes, and people with cardiovascular respiratory diseases as sensitive receptors. Residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks may contain a high concentration of these sensitive receptors. Sensitive receptors near the Project site are shown in **Figure 3.3-1**. The closest sensitive receptors to where quarry activities would occur are residences in the Betabel RV Resort on Betabel Road, between about 1,600 feet to 2,600 feet southeast of the boundary of the Phase 4 mining area. Active areas of the quarry where equipment would typically be used are located over 1,600 feet from the closest receptor. A single-family residence (Res. F in Figure 3.3-1) is located approximately 75 feet northwest of the Project entrance from Highway 101 on Old Monterey Road, which would be approximately 1.3 miles north of proposed quarry activities.

3.3.4 Impact Evaluation

3.3.4.1 Approach to the Analysis

The air quality assessment evaluated proposed mining and processing operations based on the average quantity of processed aggregate proposed to be exported from the quarry, processing equipment and processing rates, off-road mobile equipment for use in mining and processing, the number and types of quarry vehicles, and the construction and operation schedule.

Construction and operational activity emissions were calculated separately. For the construction period, exhaust emissions were calculated from construction-related equipment and vehicles, plus fugitive dust emissions from earthmoving and travel over unpaved and paved surfaces. For operation, exhaust emissions were calculated from mining equipment and vehicles, plus rail and haul truck transport of mined materials. This analysis is based on vehicle and equipment use estimates provided by the Applicant for the Project, which are included in Appendix D.



SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

SOURCE: Illingworth & Rodkin, Inc., 2021

SCC Sargent Quarry

Figure 3.3-1
Project Area Sensitive Receptors

ESA

This analysis was conducted following guidance provided by the BAAQMD and MBARD. Air pollutant emissions were computed for Project construction, and operation and reclamation, by Illingworth & Rodkin on behalf of the County as shown in the calculation spreadsheets and model output provided in Appendix D. The year 2024 was assumed to represent Project conditions with a maximum production level of 1,860,000 tons of sand and gravel (product) annually. This analysis evaluated proposed quarry mining and processing operations based on the maximum quantity of processed aggregate proposed to be mined and exported from the quarry, maximum processing equipment and processing rates, off-road mobile equipment for use in mining and processing, the number and types of quarry vehicles, and the proposed quarry operation schedule.

As shown in Table 3.13-1, Hourly Distribution of Project Trips, in Section 3.13, Transportation, there would be an average of 120 haul trucks per day that would access the quarry (i.e., 240 one-way trips) for export of processed aggregate 310 days per year, while the maximum amount of haul trucks to access the quarry per day would be 139 haul trucks (278 one-way trips). In addition to the haul trucks, there would be about 8 trucks (16 one-way trips trips) for material delivery and maintenance and 15 employee vehicles (30 one-way trips) per day (Illingworth & Rodkin 2021).

Emissions estimates from off-road mobile equipment were developed based on a list of equipment and annual hours of use provided by the Applicant (See Table 2-4 in Chapter 2, Project Description). This equipment was assumed to generally operate a maximum of 10 hours per day for 310 days per year. Extracted aggregate from the mining areas would be transported to the processing area via an overland conveyor and stockpiled.

Once at the processing facility, processing of the aggregate would include washing and size segregation using wet processes (to reduce fugitive dust) then placed in storage piles. Stationary processing equipment would be electrically powered. A list of processing equipment was provided by the Applicant and used in calculating particulate matter emissions from the processing operations. Most of the processing would be done while the aggregate is wet to reduce emissions of fugitive dust. A maximum processing rate of 600 tons per hour for 10 hours per day (6,000 tons per day) over 310 days per year was assumed for emissions modeling.

The earliest year that activity could reach intended maximum production levels is 2024. By analyzing maximum operational conditions in 2024, the maximum emissions on an annual and average daily basis are predicted. Emissions rates from on-site equipment and vehicles would decrease beyond 2024 as newer or retrofitted vehicles and equipment with lower emissions rates are utilized. Hence, future operations would have lower emissions than those predicted in 2024.[2]

2 Emissions modeling was conducted assuming construction in 2022 and operations starting in 2023. However, as reflected in the Project Description, these dates were extended to 2023, and 2024, respectively. This results in a conservative estimate of emissions, because emission rates decrease with future years due to improvements in engine and fuel technology plus retirement of older, dirtier engines from the fleet.

SFBAAB

As described in Section 3.3.2.3, BAAQMD has adopted thresholds of significance to assist in the review of projects under CEQA (2017). These are the thresholds the County uses to evaluate air quality impacts from projects. The significance thresholds adopted by BAAQMD that are used for impact determinations for Project activities conducted within the SFBAAB are summarized in **Table 3.3-4**.

TABLE 2.3-4
AIR QUALITY SIGNIFICANCE THRESHOLDS

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices (BMPs)	Not Applicable	
Risk/Hazard Type	**Single Source within 1,000 feet**	**Cumulative Sources within 1,000 feet**	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10.0 per one million	100 per one million	
Chronic or Acute Hazard Index	1.0	10.0	
Incremental annual average $PM_{2.5}$	0.3 μg/m^3	0.8 μg/m^3	

SOURCE: BAAQMD 2017c.

MBARD

Since the Project would generate traffic that would travel into the NCCAB, these emissions were evaluated using the CEQA Air Quality Guidelines developed by the MBARD. For indirect Project emissions (e.g., emissions from Project traffic), the MBARD has established the following emissions-based significance criterion (MBUAPCD 2008):

- 137 pounds per day or more of volatile organic compounds (referred to in this analysis as ROG) or NO_x.

MBARD's emission-based threshold for PM_{10} only applies to on-site activities, and since the Project site is located outside the North Central Coast Air Basin, the threshold would not apply. MBARD does not have thresholds for any other pollutants including $PM_{2.5}$, for which the air basin is considered to be in attainment.

3.3.4.2 Significance Criteria

The Project would result in a significant impact on air quality if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Emit criteria air pollutants for which the region is in nonattainment status;

c) Expose sensitive receptors to substantial pollutant concentrations; or

d) Result in odorous emissions adversely affecting a substantial number of people.

3.3.4.3 Project Impacts

Impact 3.3-1: The Project would affect implementation of the applicable air quality plans (Significant and Unavoidable)

This impact addresses significance criterion (a).

Construction, Operation, and Reclamation

All Project Components

Equipment operated at the plant that emits air pollutants would require a Permit to Operate from the BAAQMD. This permit would include conditions for equipment and plant quarry operations to ensure that BAAQMD rules and regulations that pertain to this Project, including relevant requirements within the 2017 Clean Air Plan, are implemented. Construction activities would need to comply with Regulations 1 (Public Nuisance) and 6 (Particulate Matter), and operational and reclamation activities would need to comply with Regulation 2, Rule 2 (Permits and New Source Review), and Regulation 10 (NSPS).

As discussed in detail under Impact 3.3-2, the Project would result in long-term operational NO_x emissions that would exceed significance thresholds (as shown in Table 3.3-6 below). According to the BAAQMD CEQA Guidelines, one of the measures to demonstrate a project's consistency with the applicable clean air plan is for its emissions to remain below the significance thresholds. As a result, the Project would conflict with the clean air plan implementation and the impact would be **significant**.

> **Mitigation Measure 3.3-1:** Implement Mitigation Measures 3.3-2a and 3.3-2b, discussed in greater detail below under Impact 3.3-2.
>
> **Significance after mitigation:** Significant and Unavoidable.
>
> Even with implementation of Mitigation Measures 3.3-2a and 3.3-2b, the NO_x emissions would not be reduced to below the significance thresholds, so the Project would continue to impede implementation of applicable air quality plans. Therefore, this impact is considered significant and unavoidable.

Impact 3.3-2: The Project would emit criteria air pollutants ozone precursors (NO_x and ROG), $PM_{2.5}$, and PM_{10}, for which the region is in nonattainment status. (Significant and Unavoidable)

This impact addresses significance criterion (b).

Construction

The assumed equipment usage and durations for construction of each Project component are shown in **Table 2-5** in Chapter 2, and traffic projections are discussed in detail in Section 3.13, Transportation. Each component would be constructed sequentially, with the exception of the Monterey Road Improvements and Northbound 101 Acceleration Lane improvements, which would be constructed at the same time.

During construction, earthmoving vehicles and other diesel and gas-powered construction equipment would generate exhaust emissions of NO_x, VOC, and particulate matter. PM_{10} and $PM_{2.5}$ would also be generated in the form of fugitive dust emissions from ground disturbance associated with earth clearing and grading, and vehicle traffic on unpaved surfaces at the Project site and on access roads.

The amount of dust generated would be highly variable and is dependent on the size of the area disturbed, amount of activity, and soil and meteorological conditions. Although construction activities would be temporary, they would have the potential to cause both nuisance conditions and air quality impacts. PM_{10} is the pollutant of greatest concern associated with dust. If uncontrolled, PM_{10} concentration levels downwind of actively disturbed areas could exceed State standards and result in a significant impact. The BAAQMD does not have a significance threshold for fugitive dust from construction, but specifies the use of BMPs would result in a less-than-significant impact.

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from on-site construction activity, which is primarily made up of construction equipment emissions and evaporative emissions from application of coatings (e.g., painting) and any paving, and off-site activity, which includes construction vehicle trips (worker travel, vendor trucks, and haul trucks). The Project land use types and size, construction schedule, and equipment usage information provided by the Applicant were input to CalEEMod. The CalEEMod model output along with construction inputs are included in Appendix D.

Construction emissions would vary day to day and it is not possible to accurately quantify this variation. BAAQMD's recommended thresholds for construction emissions have units of average daily pounds. All construction would occur within one year. The average daily emissions for construction were computed by dividing the total construction emissions by the number of active workdays during that year. **Table 3.3-5** shows the average daily construction emissions of ROG, NO_x, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction.

As indicated in Table 3.3-5, estimated average daily Project construction emissions from construction equipment and vehicle exhaust would not exceed the BAAQMD significance thresholds; thus, the impact of Project-generated exhaust emissions during construction would be **less than significant**.

TABLE 3.3-5
CONSTRUCTION PERIOD EXHAUST EMISSIONS

Year	ROG	NO_x	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Construction Emissions Per Year (Tons)				
2023	0.18	1.94	0.09	0.08
Future years (Maintenance of Monterey Rd)	0.01	0.05	0.00	0.00
Average Daily Construction Emissions (pounds/day)				
2023 (157 construction workdays)	2.3	24.8	1.1	1.0
Future years (Maintenance of Monterey Rd)	0.8	5.0	0.3	0.2
BAAQMD Thresholds (pounds per day)[a]	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

NOTES:
a. PM_{10} and $PM_{2.5}$ thresholds for construction impacts are for exhaust only. There are no thresholds for fugitive dust from construction.
SOURCE: Illingworth & Rodkin 2021.

BAAQMD evaluates the impact from construction fugitive dust emissions based on use of BMPs rather than a quantified amount compared to a threshold (as opposed to exhaust emissions of PM10 and PM2.5, which are compared to a threshold, as shown in Table 3.3-5). However, the Project does not include BMPs control dust emissions during construction. As described above, uncontrolled fugitive dust (without BMPs) would result in a significant impact.

Operation

Project emissions were estimated for both air basins. The primary sources of pollutants are on-site operation of off-road (mining) equipment and on-road vehicle traffic. Off-road equipment and most on-road vehicle traffic emissions would affect air quality in the SFBAAB. Only the portion of Project on-road traffic that travels south would affect air quality in the NCCAB. Off-road mining equipment emissions were estimated using the latest emission factors from CARB's OFFROAD emission model along with proposed equipment inventories and schedules of activity. On-road vehicles emissions were computed using CARB's most recent (2021) on-road EMission FACtor model EMFAC 2021 along with traffic projections and origin/destination projections of vehicle travel. This model incorporates SAFE rule fuel economy and CO2 emission rates. The equipment and vehicle usage schedule and amounts for mining were assumed to be equivalent to those for reclamation. Thus, the emissions shown below represent both operation and reclamation activities.

On-site emission sources at the Project include stationary, mobile, and fugitive sources. The conveyor belts would be powered by electricity and would not result in any direct emissions of criteria air pollutants.

The assumptions and models used to estimate emissions for each Project component are described in detail below. Because the thresholds are based on total daily emissions rather than the emissions of each individual component, the calculated emissions are presented under Emissions Summary, following the assumptions and modeling discussions.

Mining Pits and Processing Plant

Exhaust

Exhaust emissions from off-road mobile equipment that would be operated at the Project site were computed using emission factors from the latest version of CARB's off-road emissions model for off-road diesel engines, the OFFROAD2017 Orion model. CARB developed these emission factors, which vary by engine horsepower rating and year of engine, for preparing State and local emission inventories of diesel equipment and off-road sources. Emissions of NO_x, ROG, PM_{10}, and $PM_{2.5}$ were estimated using these emission factors, along with the year of equipment, engine horsepower ratings, operating schedule, and equipment load factors. Typical off-road equipment can last many years. Older equipment can produce emissions much higher than newer equipment that must meet current or near-future mandated emission standards. Thus, the age of the equipment was taken into account when estimating emissions. In addition to the mobile equipment, emissions from the Project's 65 kVA (70 horsepower) diesel emergency generator were calculated using the OFFROAD2017 emission factors. The generator was assumed to operate for 50 hours per year for the purposes of maintenance and testing. In general, generators are tested for one half hour per week or per month. Emissions estimates assuming 50 hours would account for some amount of time in emergency use.

Fugitive Dust

Particulate matter emissions from the quarry processing equipment and from overburden and aggregate handling (e.g. truck loading) were calculated using quarry and equipment processing rates and the USEPA's AP-42 emission factors for crushed stone processing (AP-42 Section 11.19-2). Fugitive dust emissions from overburden and aggregate handling (e.g., truck loading) were calculated using USEPA emission factors for aggregate handling and storage piles (AP-42 Section 13.2.4). Emissions associated with processing of the aggregate would only include fugitive PM_{10} and $PM_{2.5}$, and not NO_x and ROG emissions (which are associated with fuel combustion) because the processing equipment would be electrically powered.

Dust would also be generated during mining activities. In each phase, topsoil and vegetation would be left in place until a particular area is ready to be mined. Mining activities would occur within only portions of each pit at any one time, limiting the amount of dirt that is being exposed and moved mechanically. Cut slopes would be watered by water trucks to minimize dust from exposed areas. Nonetheless, some dust would be generated in areas of active mining.

Exhaust from On-Site Access Road Vehicle Travel

Exhaust emissions from on-road vehicles at the site (water trucks, service trucks, and quarry pick-up trucks) were computed using emission factors from the CARB EMFAC2021 on-road mobile source emissions model. Project trucks operating at the quarry site would be new trucks (assumed to be model year 2022). The water trucks and service trucks would be diesel-fueled and were assumed to be heavy duty trucks. There would be two pick-up trucks, with one being diesel-fueled and the other being gasoline-fueled, which were assumed to be light heavy-duty and light duty trucks, respectively. For this analysis, emission factors for calendar year 2023[3] were used. A vehicle speed of 15 miles per hour was used to calculate emissions for vehicles traveling on the access roads and within the quarry, except for the water truck, which was assumed to travel at 5 mph.

Fugitive Dust

Fugitive dust emissions of PM_{10} and $PM_{2.5}$ were calculated for Project vehicle and equipment travel over on-site unpaved roads and other unpaved areas. In addition, fugitive dust from overburden and aggregate handling, mostly from truck loading, were calculated. USEPA AP-42 emission factors for vehicle travel on unpaved roads (USEPA 1995) and information on road silt content and vehicle weight were used to calculate emissions. Access road fugitive dust emissions were calculated for the Project loaders, motor grader, scraper, service trucks and pick-up trucks. An unpaved road silt content of 10 percent was used, similar to the silt content of the Project aggregate provided by the Applicant. The types of vehicles and average vehicle weights were based on information provided by the Applicant and data from manufacturers. The numbers of miles traveled on unpaved roads for each vehicle type were calculated based on the number of hours the vehicles were assumed to be driven per day and an average vehicle speed. Project emission control was assumed to be use of watering of unpaved areas and a travel speed of 15 mph or less. Details of the Project vehicles and assumptions used for the emission calculations are provided in Appendix D.

Rail Spur

Use of rail for hauling would result in emissions from diesel-powered locomotives. There would be approximately three trains per week, or up to 156 train loads per year, along the existing Union Pacific north-south rail line to the east adjacent to U.S. 101. The rail line predominantly parallels Monterey Road between Gilroy and San José. Most of these trains would travel from the site to San José, with occasional trains continuing to Redwood City. Based on information provided by the Applicant (Freeman Associates 2016, page 2, Item 7), it was assumed that 80 percent of the trains would travel between the quarry site and San José with a one-way travel distance of about 40 miles, and 20 percent of the trains would travel to the Port of Redwood City with a one-way travel distance of 57 miles.

Air pollutant emission factors for train travel emissions in 2024, in units of grams per gallon, were calculated using the CARB methodology for the Vision 2.1 locomotive inventory in California (Vision inventory). The Vision inventory contains emission factors specific to California's line-haul locomotive fleet, which were combined with fuel productivity factors in terms of gross ton-mile traveled per gallon of fuel for locomotives in the SFBAAB to estimate emission rates for the Project locomotives. Emission factors for train idling emissions, in units of grams per hour, were calculated based on USEPA data and emission factors and a recent

[3] Emissions modeling was conducted assuming construction in 2022 and operations starting in 2023. However, as reflected in the Project Description, these dates were extended to 2023, and 2024, respectively. This results in a conservative estimate of emissions, because emission rates decrease with future years due to improvements in engine and fuel technology plus retirement of older, dirtier engines from the fleet.

Environmental Impact Report that addressed waste hauling by rail from the Bay Area to the Ostrom Landfill in Yuba County (Yuba County Planning Department 2018). The rail emission calculations within the SFBAAB are included in Appendix D.

Off-Site Travel on Paved Roads

Criteria pollutant emissions were calculated for vehicle travel on off-site paved roads. The vehicles included in these emissions calculations are on-road haul trucks, other trucks visiting the quarry, and worker vehicles. Exhaust emissions and particulate matter emissions from tire and brake wear were calculated using emission factors from the CARB EMFAC2021 mobile emissions model for vehicles traveling at 55 mph during the initial Project year 2024. Particulate matter entrained dust emissions from vehicles traffic were calculated using CARB emission calculation procedures. Details of the on-road vehicles and assumptions used for the emission calculations are provided below.

On-Road Haul Trucks

As discussed in Section 3.13, Transportation, it is assumed that 80 percent of the trucks would travel north in Santa Clara County, 10 percent would travel south to San Benito County, and 10 percent would travel south to Monterey County. In calculating emissions, the following assumptions were used:

- Northbound trucks would travel to the San José/Santa Clara area with an average trip distance of 40 miles.
- Southbound trucks to Monterey County would travel to Salinas with an average trip distance of 27 miles.
- Southbound trucks to San Benito County would travel to Hollister with an average trip distance of 17 miles.

Other Trucks

Other trucks would include material delivery trucks and maintenance vehicles. All trucks were assumed to be heavy-duty diesel trucks traveling at 55 mph. Based on the traffic report for the Project there would be a total of 16 other truck trips per day, 310 days per year. The same trip distribution and distances as described above for haul trucks were assumed for these other truck trips.

Worker Vehicles

All worker vehicles were conservatively assumed to be light-duty trucks traveling at 55 mph. Based on the traffic report for the Project there would be 30 worker vehicle trips per day, 310 days per year. Although there would be some workers coming from Hollister, it was conservatively assumed that all worker trips would be within the Bay Area Air Basin, with most coming from Gilroy. The average trip distance was assumed to be 18 miles to allow for some workers traveling from San Jose.

Emissions were calculated for worker and haul truck travel within the SFBAAB (Santa Clara County) and within the NCCAB (Monterey and San Benito Counties).

Emissions Summary

Project emissions that would be generated in the SFBAAB are shown in **Table 3.3-6**. Details of the emission calculations and equipment lists are provided in Appendix D. Note that the average daily and annual emissions reflect the maximum number of days of quarry operation that the Project proposes. As shown in Table 3.3-6, NO_x, PM_{10}, and $PM_{2.5}$ emissions would exceed BAAQMD significance thresholds for emissions within the SFBAAB resulting in a **significant impact**. Most of the NO_x emissions would be associated with the off-road equipment exhaust, primarily from the bulldozer, and the off-site vehicle travel, mostly truck traffic. The primary source of PM_{10} and $PM_{2.5}$ emissions (i.e., 73 percent) would be from fugitive dust from on-site unpaved road travel.

TABLE 3.3-6
CRITERIA AIR POLLUTANT EMISSIONS IN THE SFBAAB FROM OPERATIONS AND RECLAMATION

Emission Source	NO_x	ROG	PM_{10}	$PM_{2.5}$
Average Daily Emissions (lb/day)*				
Processing Equipment	-	-	15.3	4.3
Quarrying/Fugitives	-	-	15.3	4.3
Off-Road Equipment Exhaust	30.6	5.5	1.1	1.1
On-Site Quarry Vehicle Exhaust	1.2	0.0	0.0	0.0
On-Site Unpaved Road Fugitive Dust	-	-	507.7	50.8
Rail Emissions	17.0	0.8	0.4	0.3
Off-Site Paved Road Vehicle Emissions	34.0	0.4	3.8	1.4
Total	**82.8**	**6.7**	**543.6**	**62.2**
Significance Threshold	**54**	**54**	**82**	**54**
Significant?	**Yes**	No	**Yes**	**Yes**
Annual Emissions (tons/year)				
Processing Equipment	-	-	2.4	0.7
Quarrying/Fugitives	-	-	2.4	0.7
Off-Road Equipment Exhaust	4.7	0.8	0.16	0.17
On-Site Quarry Vehicle Exhaust	0.2	0.0	0.00	0.00
On-Site Unpaved Road Fugitive Dust	-	-	12.1	1.2
Rail Emissions	2.6	0.1	0.06	0.05
Off-Site Paved Road Vehicle Emissions	5.3	0.1	0.6	0.2
Total	**12.8**	**1.0**	**17.7**	**3.0**
Significance Threshold	**10**	**10**	**15**	**10**
Significant?	**Yes**	No	**Yes**	No

NOTES:
* Average daily emissions calculated based on annual emissions and 310 days per year for quarry operation
SOURCE: Illingworth & Rodkin 2021.

As shown in Table 3.3-6, rail operations would account for about 20 percent of average daily NO_x emissions, less than 0.1 percent of average daily PM_{10} emissions, and 0.5 percent of average daily $PM_{2.5}$ emissions. Similarly, rail operations would contribute about 20 percent of annual NO_x emissions and less than 0.4 percent of annual PM_{10} emissions. Therefore, rail operations would be a substantial contributor to significant NOx emissions, but not a substantial contributor to significant particulate matter emissions.

Among other authorizations, the Project would be regulated by a Permit to Operate issued by BAAQMD. This permit applies to aggregate processing equipment and requires controls in the water spray systems, throughput limits, and performance standards (e.g., opacity limits), and would include requirements to use electric-powered equipment and to implement reporting. The Project would include new equipment. The emissions reported in Table 3.3-6 do not assume implementation of dust control measures. The quarry does not have a comprehensive dust control plan that serves as BMPs for fugitive dust control.

As shown in **Table 3.3-7**, emissions of NO_x and ROG generated within the NCCAB would not exceed the MBARD significance thresholds. Therefore, the air quality impact in NCCAB would be **less than significant**.

TABLE 3.3-7
CRITERIA AIR POLLUTANT EMISSIONS IN THE NCCAB

Emission Source	NO_x	CO	ROG*	PM_{10}	$PM_{2.5}$
Average Daily Emissions (lb/day)*					
Off-Site Paved Road Vehicle Emissions	4.1	0.2	0.1	0.4	0.1
Significance Threshold	137	--	137	--	--
Significant?	No	--	No	--	--
Annual Emissions (tons/year)					
Off-Site Paved Road Vehicle Emissions	0.64	0.03	0.01	0.06	0.02
Significance Threshold	--	--	--	--	--

NOTES:
* For this analysis, ROG is considered equivalent to VOC.
SOURCE: Illingworth & Rodkin 2021.

Reclamation

Over the 30-year period of Project operation, portions of the site would be reclaimed upon completion of each operation phase. Emissions associated with the reclamation were included in the overall Project operational emissions estimates shown in Table 3.3-6. Thus, the **significant** impact described above for Project operations also applies to proposed reclamation activities and the mitigation measures discussed below would also apply to reclamation activities.

Health Effects of Ozone and Ozone Precursors

Health effects of criteria pollutant emissions and ozone concentrations are described in Section 3.3.1.1.Given that ground-level ozone formation occurs through a complex photo-chemical reaction between NO_x and VOCs in the atmosphere with the presence of sunlight, the impacts of ozone are typically considered on a basin-wide or regional basis instead of a localized basis. The BAAQMD has not established a significance threshold for ground-level ozone. The health-based ambient air quality standards for ozone are as concentrations of ozone and not as the mass weight (e.g., pounds) of their precursor pollutants (i.e., NO_x and VOCs). It is not necessarily the pounds of precursor pollutants that causes human health effects, but the concentration of resulting ozone or particulate matter. Meteorology, the availability of ozone precursors, the presence of sunlight, seasonal impacts, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone. (South Coast Air Quality Management District 2014; San Joaquin Valley Unified Air Pollution Control District 2014).

As expressed in the *amicus curiae* brief submitted for the *Sierra Club v. County of Fresno* case (*Friant Ranch Case*) (South Coast Air Quality Management District 2014; San Joaquin Valley Unified Air Pollution Control District 2014), the CEQA criteria pollutant significance thresholds from the BAAQMD were set at emission levels tied to the region's attainment status; since air quality standards are set at levels that protect public health, ozone precursor emissions that exceed significance thresholds are assumed to lead to adverse regional health effects, but these health effects cannot meaningfully be quantified. They are emission levels at which stationary pollution sources permitted by the BAAQMD must offset their emissions and the CEQA evaluation of the project must identify any feasible mitigation measures. They are not intended to be indicative of any localized human health impact that a project may have. Therefore, the Project's exceedance of the mass regional emissions threshold (i.e., pounds per day [ppd] NO_x thresholds) from Project-related activities does not necessarily indicate that the project would cause or contribute to the exposure of localized sensitive receptors to ground-level concentrations in excess of health-protective levels.

Summary

Construction activities would not exceed BAAQMD thresholds for exhaust pollutants. For fugitive dust impacts, the impact is significant without use of BMPs. The Project does not include BMPs or dust control measures that would prevent uncontrolled fugitive dust emissions, which would be a significant impact on air quality. Project operation and reclamation would exceed NOx, $PM_{2.5}$ and PM10 thresholds for exhaust pollutants. Therefore, the Project would have a **significant impact** on air quality.

Mitigation Measure 3.3-2a: The Project Applicant shall require that all off-road mobile equipment and Applicant-owned trucks powered by diesel used during the construction and operation phases of the Project meet USEPA Tier 4 engine standards for NO_x (i.e., Tier 4 final). If implementation of this requirement is determined to not be feasible for given piece(s) or model(s) of off-road equipment, the Project Applicant shall substantiate the reason(s) for infeasibility and shall propose equipment with the next most restrictive tier status (e.g., Tier 3, Tier 2) and shall submit the documentation to the County of Santa Clara for review and approval at least 7 days prior to the planned use of the non-Tier 4 equipment.

Mitigation Measure 3.3-2b: The Project Applicant shall develop and implement a comprehensive dust control plan for Project construction and operation and shall submit the plan to the County Department of Planning and Development at least 90 days prior to the start of construction for review and approval. Designate a person to implement and modify the Dust Control Plan as appropriate. The plan shall include but not be limited to the following elements based on BAAQMD recommended construction mitigation measures, most of which also apply to Project operations:

1. Water all active unpaved vehicle roadways at least twice a day during dry conditions to ensure that roadways are damp enough to suppress dust generation;

2. All haul trucks transporting soil or sand off-site shall be covered;
3. Limit vehicle speeds to 15 miles per hour on all unpaved roadways and off-road areas (e.g., mining pits);
4. Prevent dirt track out on to public roadways by using wheel washers or other washing methods to ensure that tires or tracks on all trucks and equipment leaving the site are cleaned of dirt. The use of dry power sweeping is prohibited;
5. Remove any visible mud or dirt tracked-out onto Old Monterey Road using wet power vacuum street sweepers at least once per day;
6. Water, cover, or treat (with non-toxic soil stabilizers) exposed stockpiles of fine materials;
7. Water and/or treat inactive exposed soil areas including areas exposed within mining pits, to minimize dust generation from wind or other ground disturbances;
8. Apply water misting or spraying to all material transfer points, including export truck loading activities;
9. Post a publicly visible sign with the telephone number and person to contact at the County of Santa Clara regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations;
10. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph;
11. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established;
12. All trucks and equipment, including their tires, shall be washed off prior to leaving the site;
13. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6-to 12-inch compacted layer of wood chips, mulch, or gravel;
14. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than 1 percent; and
15. In the processing areas where vehicles and equipment travel, apply dust suppressant at least once per year in addition to watering and limiting travel speeds to 15 mph. Dust suppressants or gravel would be applied more often if visible dust clouds extending beyond the roadway are noted, or apply gravel to the areas.

Significance after mitigation: Significant and Unavoidable.

Effectiveness of mitigation measures in reducing emissions is quantified in Appendix D. With implementation of Mitigation Measure 3.3-2a, the use of only off-road mobile equipment that meet Tier 4 engine standards would reduce the average daily NO_x emissions to 56.7 pounds per day and the annual emissions to 8.8 tons per year. These emission levels may be higher if it is determined that Tier 4 engines may not be feasible for certain pieces of equipment. In any case, the reduced daily NO_x emissions would exceed the BAAQMD significance threshold of 54 pounds per average day. Depending on the level of feasibility of Mitigation Measure 3.3-2a, the annual NO_x emissions may or may not exceed the BAAQMD significance threshold of 10 tons per year. The Project would not have control over independently owned and operated truck fleets, so there would be no means for the County to effectively impose measures to reduce Project-related off-site truck fleet emissions. For these reasons, the impact with respect to NO_x emissions that would contribute to nonattainment ozone levels in the region would be reduced, but not to a less-than-significant level.

Further, it is not legally feasible for the County to regulate railroad NOx emissions, because local regulation of railroad emissions is preempted by federal law (the Interstate Commerce Commission Termination Act). Mitigation Measure 3.3-2a would not reduce average daily NOx emissions to below the BAAQMD significance threshold, and due to federal preemption, it is not legally feasible for the County to impose mitigation that would reduce the rail-related emissions, which would account for about 30 percent of post-mitigation emissions.

With implementation of Mitigation Measure 3.3-2b, the Basic Control measures would reduce on-site PM_{10} and $PM_{2.5}$ fugitive dust emissions by up to 85 percent (Illingworth and Rodkin 2021). Depending on the specific emission source, emissions would be reduced to 107 pounds PM_{10} and 18 pounds $PM_{2.5}$ per average day and annual emission would be reduced to 16.6 tons PM_{10} and 2.8 tons $PM_{2.5}$ per year. These controls would result in $PM_{2.5}$ emissions below thresholds, but PM_{10} emissions would be above the significance threshold. Implementation of Mitigation Measure 3.3-2b's Enhanced Dust Control Measures would reduce both PM_{10} and $PM_{2.5}$ emissions further since much of these emissions are from vehicle and equipment travel in unpaved areas. PM_{10} emissions would be reduced to 78.7 pounds per average day or 12.2 tons per year. The Enhanced Controls would further reduce PM_{10} emissions.

Implementation of Mitigation Measures 3.3-2a and 3.3-2b combined would reduce PM_{10} exhaust and fugitive dust combined emissions to approximately 107 pounds per day and 17 tons per year, which would continue to be a significant impact. However, Mitigation Measures 3.3-2a and 3.3-2b would reduce $PM_{2.5}$ exhaust and fugitive dust combined emissions to approximately 18 pounds per day and 4 tons per year, which would reduce the $PM_{2.5}$ impact to less than significant.

In addition, Mitigation Measure 3.8-1d in Section 3.8, Greenhouse Gas Emissions could reduce NOx impacts by incentivizing the use of electric trucks if and when they are available. However, it would be speculative to quantify the extent to which this would reduce emissions.

However, because NO_x and PM_{10} emissions impacts cannot be reduced to less than significant even with mitigation, the residual impact after mitigation would remain significant, and the impact would be significant and unavoidable.

Impact 3.3-3: The Project could expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)

This impact addresses significance criterion (c).

Construction

The number of truck trips during the construction period would be less than those for operation and reclamation, which would last for a 30-year period. Thus, the worst-case scenario for the 30-year health risk exposure calculation would be an exposure period starting with operations and continuing through the 30-year life of the Project, which is discussed below. Because of the short duration, health risks from Project construction activities would be well below the established threshold, and therefore **less than significant**.

Operation

Mining Pits

Diesel Particulate Matter Exhaust Emissions

The BAAQMD CEQA Air Quality Guidelines (BAAQMD 2017c) recommend lead agencies evaluate sources that are located within a 1,000-foot radius of sensitive receptors for local community risk and hazard impacts associated with exposure to emissions from diesel fuels, because negligible impacts are likely beyond that distance. The closest sensitive receptors to where quarry activities would occur are residences in the Betabel RV Resort on Betabel Road, between about 1,600 feet to 2,600 feet southeast of the boundary of the Phase 4 mining area. Active areas of the quarry, where equipment would typically be used are located over 1,600 feet from the closest receptor. Since proposed on-site active quarry areas would be over 1,000 feet from sensitive receptors, those receptors would not be exposed to emissions at levels that would result in a substantial health risk. Therefore, there would be **a less-than-significant impact**.

Naturally Occurring Asbestos and Crystalline Silica

While serpentine formations have not been mapped within the project site, there could be conglomerates present that include serpentine (Cornerstone 2016). Mining could disturb the serpentine leading to potential exposure of airborne naturally occurring asbestos (NOA).

If there was found to be NOA in the rock disturbed during Project construction and operation, then the Project would be subject to CARB's ATCM (CARB 2002). This measure requires regulated operations in areas where NOA/serpentine rock is likely to be found, to employ the best available dust mitigation measures in order to reduce and control dust emissions. The BAAQMD enforces the requirements of the asbestos ATCM. The BAAQMD may grant an exemption from the ATCM requirements if a geological evaluation demonstrates that ultramafic rock or serpentine is not likely to be found. Before an exemption can be granted; however, the owner/operator must provide a copy of a report detailing the geologic evaluation to the BAAQMD for consideration.

Fugitive dust emissions from quarry operations may also contain crystalline silica, which could threaten human health if ground-level concentrations exceed the OEHHA acceptable exposure level. Based on dust sample testing of overburden and road dust for crystalline silica at an active quarry in the south bay region (County of Santa Clara 2011), air pollutant dispersion modeling conducted for that quarry showed concentrations adjacent to the site to be well below crystalline silica OEHHA reference exposure levels. A similar result would be likely for any crystalline silica amounts that could be present in the disturbed soil at the Project site. In addition, since proposed on-site active quarry areas at the Project site would be over 1,000 feet from sensitive receptors, those receptors would not be exposed to emissions at levels that would result in a substantial health risk. Therefore, there would be a **less-than-significant impact**.

Conveyor Belts

The conveyor belt would be electric and would therefore not emit any combustion air pollutants. Some amount of fugitive dust would be emitted during transport of the material, but these emissions would occur at a distance greater than 1,000 feet from sensitive receptors. In addition, the conveyors are equipped with sprayers that would moisten the material and reduce emissions. Therefore, there would be **a less-than-significant impact**.

Processing Plant and Rail Spur

The processing plant and rail spur would be located more than 1.5 miles from the nearest sensitive receptors. At this distance, the mobile equipment using diesel fuels would not pose a risk to these receptors. The plant itself would use electricity to operate, and the backup generator would operate only periodically for maintenance and in the event of a power outage. Therefore, there would be **no impact**.

Access Road

The access road and the highway would carry most of the Project traffic and are located within 1,000 feet of two residences on Old Monterey Road. The Santa Clara Valley Transportation Authority and Caltrans are planning modifications to U.S. Highway 101 in the vicinity of this location. Old Monterey Road would be converted to a frontage road and realigned parallel along the west side of U.S. Highway 101. As part of the realignment, the road would be extended northward past the two residences. Quarry truck traffic would then be re-routed along the frontage road and nearer to the residences. As a result of this highway project, impacts associated with quarry traffic upon these residences would increase. Local community risk and hazard impacts from quarry-generated traffic were evaluated at the residences near the intersection of the Old Monterey Road and U.S. 101.

Increased cancer risks and $PM_{2.5}$ concentrations associated with the quarry traffic were predicted at the residence nearest Old Monterey Road. The modeling was conducted using the CAL3QHCR model and EMFAC2017 DPM/$PM_{2.5}$ emissions for 2020.[4] Dispersion modeling using CAL3QHCR included 5 years of meteorological data collected by BAAQMD at Gilroy (1991-1993, 1995, and 1996). Travel speeds used in the emissions modeling included 55 mph for travel on U.S. Highway 101 and 30 mph on Old Monterey Road and the new frontage road. As a worst-case, emissions were assumed to occur 24 hours per day. Predicted cancer risks and $PM_{2.5}$ concentrations at the nearest sensitive receptor are reported in **Table 3.3-8**. Modeling assumptions and results are provided in Appendix D. As shown in Table 3.3-8, the modeled emissions would be well below the applicable thresholds. Therefore, this impact would be **less than significant**.

4 Note that this impact was addressed through emissions and air dispersion modeling that reflected the Project as proposed in 2020. This is conservative because the project as currently proposed would cause less truck traffic and emission rates than previously proposed. Therefore, the analysis likely overestimates the impact.

TABLE 3.3-8
PROJECT RISK IMPACTS TO THE CLOSEST SENSITIVE RECEPTOR

Source	Closest Distance (feet)	Maximum Cancer Risk[b] (per million)	Maximum Hazard Index	Maximum Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Project Sources				
Quarry traffic[a]	>75	1.0	0.0	0.0
BAAQMD Threshold - Single Source		***10.0***	***1.0***	***0.3***
Significant?		***No***	***No***	***No***

NOTES:

a. Based on screening modeling of Old Monterey Road and U.S. 101 segments with Project traffic that are within 1,000 feet of receptor.
b. The risks reported represent lifetime cancer risks and annual PM2.5 concentrations.

SOURCE: Illingworth & Rodkin 2021.

Reclamation

Regrading and recontouring within the quarries and processing plant and along the conveyor belts would be well over 1,000 feet from sensitive receptors and would therefore not pose a health risk from vehicles and equipment using diesel fuels. Fugitive dust emissions during these activities could contain crystalline silica and NOA, which could create a health risk. However, these activities would be farther than 1,000 feet from sensitive receptors, and the BAAQMD considers emissions from TAC sources farther than 1,000 feet to contribute a negligible amount to health risk. Because CARB's ATCM for NOA requires controls and BAAQMD enforcement if serpentine rock or conglomerates are found in the mined area, a geologic investigation and report would be required and, if serpentine rock is found, control measures implemented.

Revegetation activities would not rely on heavy equipment or involve extensive grading or excavation, and therefore would not pose a health risk.

For the above reasons, reclamation would have a **less-than-significant impact** on sensitive receptors.

Summary

The use of diesel fuel-powered vehicles and equipment in mining and plant operations would not result in health risks that exceed the applicable thresholds and would therefore have a **less-than-significant impact** related to health risks. Nevertheless, implementation of Mitigation Measure 3.3-2b recommended for Impact 3.3-2 would further reduce this impact.

There is potential for fugitive dust raised during mining and reclamation-related grading and recontouring to contain NOA and crystalline silica, but these activities would be farther than 1,000 feet from sensitive receptors. Crystalline silica is not expected to pose a serious health hazard at this distance. In addition, CARB does not have an ATCM for crystalline silica. However, if there is the potential for NOA to be disturbed during mining and reclamation, there could be risk to sensitive receptors, and the CARB ATCM for NOA would need to be implemented.

Mitigation None required.

Significance after Mitigation: Less than Significant

Impact 3.3-4: The Project would not result in odorous emissions adversely affecting a substantial number of people. (Less than Significant)

This impact addresses significance criterion (d).

Construction, Operation and Reclamation

Diesel equipment operating at the site during construction, operation, and reclamation may be a source of localized odors, but these would not be noticeable to off-site land uses sensitive to odors due to the distance between sensitive receptors and the Project site. One sensitive receptor is located near the northern end of Old Monterey Road, which would be improved during construction. However, construction activities associated with road improvement in this area would last approximately five weeks, which is short duration compared to the remaining construction activities. The BAAQMD's table of odor screening distances does not identify quarries as sources of odors (BAAQMD 2017c). While sensitive receptors would unlikely to be exposed to odors from the Project, BAAQMD Regulation 7-102 does prohibit odorous substances beyond the property line, and provides a mechanism for addressing complaints of odors. For these reasons, the potential for odor impacts is considered **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than Significant

3.3.4.4 Cumulative Analysis

The SFBAAB is a nonattainment area for both the federal and state ozone, PM_{10}, and $PM_{2.5}$ standards. A cumulative air quality impact already exists because of this. Additional emissions of ozone precursors NO_x or ROG, or PM_{10} or $PM_{2.5}$, over threshold amounts would further degrade air quality related to ozone.

Impact 3.3-5: The Project would contribute nonattainment pollutants (ozone precursors, $PM_{2.5}$, and PM_{10}) to cumulative increases in air pollutants. (Significant and Unavoidable)

Because the SFBAAB is currently classified as a nonattainment area for ozone precursors PM10 and PM2.5, a significant cumulative impact exists to which the Project, the projects identified in Table 3-1, and other cumulative development in the air basin could contribute.

To determine whether the Project's contribution to the significant cumulative impact would be considerable, the Project's emissions were compared to the BAAQMD significance thresholds

(Table 3.3-4) and its adherence to control measures for fugitive dust also was considered as discussed above under Impact 3.3-2, which is cumulative in nature.

Construction of the Project would result in PM_{10} emissions that would exceed the applicable thresholds, which is considered to be a cumulatively considerable contribution.

Operational Project emissions of NO_x, PM_{10}, and $PM_{2.5}$ would also be above the BAAQMD significance thresholds of 54 pounds per day, 82 pounds per day, and 54 pounds per day, respectively, which is also considered to be a cumulatively considerable contribution. Use of Tier 4 equipment and implementation of a dust control plan as described in Mitigation Measures 3.3-2a and 3.3-2b would reduce emissions, but emissions of NO_x and PM_{10} would not be reduced to a level below the significance threshold. Therefore, post-mitigation the Project's contribution to the cumulative air quality impact would remain cumulatively considerable, and therefore is considered **significant**.

Mitigation Measure 3.3-5: Implement Mitigation Measures 3.3-2a and 3.3-2b.

Significance after Mitigation: Significant and Unavoidable

As explained in Impact 3.3-2, NO_x and PM_{10} emissions would exceed threshold with mitigation. Therefore, the cumulative contribution to air quality degradation would remain a cumulatively considerable impact and cannot be reduced to less than cumulatively considerable even with mitigation. Therefore, the residual impact after mitigation would be considered significant and unavoidable.

Impact 3.3-6: The Project could contribute to cumulative TAC concentrations. (Less than Significant)

The BAAQMD CEQA Air Quality Guidelines include community risk and hazard thresholds for cumulative sources. Cumulative sources are those TAC sources that are located within 1,000 of the sensitive receptors. So, in addition to the Project, community risk impacts from other sources near the receptor on Betabel Road were evaluated. The BAAQMD maintains a GIS database of modeled risk values from highways in the SFBAAB. Values for U.S. 101 near the sensitive receptors were obtained from this GIS data and are presented in Table 3.3-9 below. Screenshots of the cancer risk and PM2.5 concentrations at these receptors are shown in Appendix D. **Table 3.3-9** presents the cumulative risk and hazards caused by the Project combined with U.S. 101 traffic (the only cumulative source within 1,000 feet of the closest sensitive receptor). As identified in the table, the cancer risk, hazard index, and $PM_{2.5}$ concentrations would be less than the cumulative significance thresholds; therefore, there is no existing significant cumulative impact related to health risk to which the Project could contribute, and the addition of Project's less than significant incremental impact would not cause a significant effect to result. Therefore, the cumulative impact related to health risk would be **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than Significant

TABLE 3.3-9
CUMULATIVE RISK IMPACTS TO THE CLOSEST SENSITIVE RECEPTOR

Source	Closest Distance (feet)	Maximum Cancer Risk[c] (per million)	Maximum Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Project Sources			
Quarry traffic[a]	>75	1.0	0.0
U.S. 101 traffic[b]	150	43.9	0.50
Cumulative Risk		***44.9***	***0.50***
BAAQMD Threshold - Cumulative		***100***	***0.8***
Significant?		***No***	***No***

NOTES:
a. Based on screening modeling of Old Monterey Road and U.S. 101 segments with Project traffic that are within 1,000 feet of receptor.
b. Based on BAAQMD Google Earth Roadway Screening Analysis Tool using interpolation of results for 150 feet from the roadway.
c. The risks reported represent lifetime cancer risks and annual PM2.5 concentrations.

SOURCE: Illingworth & Rodkin 2021.

Impact 3.3-7: The Project would not combine with other, cumulative sources of odors in the Project vicinity adversely affecting a substantial number of people. (Less than Significant)

Impact 3.3-4 describes the potential for odorous emissions from the Project. There are no other, known sources of odorous emissions of the type listed in BAAQMD Regulation 7 in the vicinity of the Project, and the cumulative impact would be **less than significant.**

Mitigation: None required.

Significance after Mitigation: Less than Significant

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3.4 Biological Resources

3.4.1 Introduction

This section addresses impacts to biological resources that would be caused by construction and operation of the proposed Project. This section describes the existing environmental setting for biological community types, wildlife, special-status plants, and jurisdictional wetlands and other waters within the Project site, and presents a discussion of applicable federal, State, and County regulations governing these resources. This section then evaluates impacts of the proposed Project on these biological resources and identifies feasible mitigation measures that could ensure significant impacts to biological resources would be avoided or reduced in magnitude.

The discussion within the following section is based on a number of reports and documents prepared by Live Oak Associates, Inc. (LOA) between 2015 and 2021 (LOA 2016, 2017a, 2017b, 2017c, 2021) (Appendices E.1, E.3, E.4, E.5, and E.8). Two peer reviews of the reports were conducted by H. T. Harvey & Associates in 2017 (HTH 2017a and 2017b) (Appendices E.2 and E.6). Rail use wildlife corridor impacts, and ground and surface water impacts are specifically addressed in peer review addenda (HTH 2019) (Appendix E.7).

3.4.2 Regulatory Setting

3.4.2.1 Federal

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) requires that both United State Fish and Wildlife Services (USFWS), which has jurisdiction over plants, wildlife, and resident fish, and the National Marine Fisheries Service (NMFS), which has jurisdiction over anadromous fish and marine fish and mammals, maintain lists of endangered and threatened species. An "endangered species" is defined as any species which is in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Under FESA, species listed as endangered or threatened are afforded protection primarily though prohibitions of Section 9 and the requirements of Section 7. FESA Section 9 prohibits the take of endangered species and prohibits the violation of any protective regulation established for a threatened species under Section 4(d) of the FESA (16 USC 1538). The FESA defines "take" to mean harass, harm, pursue, hunt, shoot, wound, trap, capture, or collect, or attempt to engage in any such conduct.

FESA Section 7 states that all federal agencies must ensure that their actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat. Consultation under Section 7 can be initiated only by federal agency project-related activities and may result in an incidental take statement that authorizes activities that may result in take, but would not jeopardize the continued existence of a listed species or adversely modify critical habitat.

For non-federally authorized projects, take can be authorized through an incidental take permit under FESA Section 10. This requires the Applicant to prepare, and USFWS or NMFS to approve, a Habitat Conservation Plan (HCP).

In addition, specific areas in which physical or biological features essential to the conservation of a protected species are present can be designated as critical habitat under FESA. Critical habitat includes specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but might be needed for its recovery. NMFS has designated the Pajaro River and Tar Creek as critical habitat for the South-Central California Coast Distinct Population Segment of steelhead.

The Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA covers whole birds, parts of birds, and bird nests and eggs. Construction disturbance during the breeding season could result in the purposeful loss of fertile eggs or nestlings, or otherwise lead to nest abandonment, in violation of the MBTA.

Bald and Golden Eagle Protection Act

The Bald Eagle Protection Act protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation. Take of bald and golden eagles is defined as disturbance, including agitation or bother of a bald or golden eagle to a degree that would cause injury to an eagle, decrease its reproductive productivity, or result in nest abandonment.

Clean Water Act

The United States Army Corps of Engineers (USACE) has primary federal responsibility for administering regulations that concern waters of the United States. The USACE acts under two statutory authorities, the Rivers and Harbors Act (Sections 9 and 10) and the Clean Water Act (CWA) under Section 404. The USACE requires that a permit be obtained if a Project proposes placing structures within, over, or under navigable waters and/or discharging dredged or fill material into waters of the United States below the ordinary high-water mark in non-tidal waters. USACE permits typically require a Project to provide mitigation that results in no net loss of wetland functions or values.

The extent of USACE jurisdiction within drainage channels is defined by the ordinary high-water mark on channel banks. Jurisdictional wetlands are generally habitats with soils that are intermittently or permanently saturated or inundated and show the presence of hydrophytic vegetation and hydric soils and wetland hydrology. When a Project may create impacts to wetlands or other jurisdictional waters, a USACE permit is generally required. Substantial impacts to wetlands may require an Individual Permit, while projects that only minimally affect wetlands may qualify for a Nationwide Permit.

3.4.2.2 State

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA), which prohibits "take" of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. The California Department of Fish and Wildlife (CDFW) administers CESA and, except for fully protected species, authorizes take through Section 2080.1 agreements (also known as a Consistency Determination) for take of species that are both federal- and state-listed, and Section 2081 incidental take permits for take of a state-only listed species.

Natural Community Conservation Planning Act

The NCCP Act of 1991, amended 2003, is a federal and State cooperative effort to engage in regional multiple species conservation planning. NCCPs provide regional or area-wide protection of plants and animals, reconcile urban development and wildlife needs, "conserve" state-listed species to the point where they can be delisted, and maintain or enhance conditions for covered species such that listing will not become necessary. The NCCP Act was amended again in 2011 to allow CDFW to authorize incidental take of "fully protected" species if they are "covered species" under an approved NCCP.

California Fish and Game Code – Nesting Birds

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.3 of the California Fish and Game Code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs.

California Fish and Game Code – Bats

Section 2000 and 4150 of the California Fish and Wildlife Code states that it unlawful to take or possess a number of species, including bats, without a license or permit. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as "an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering".

California Fish and Game Code – Fully Protected Species

Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code protect certain fish, amphibian, reptile, bird, and mammal species that are explicitly listed as fully protected. Fully protected species may not be taken or possessed, and no licenses or permits may be issued for their take except for scientific research purposes and relocation of the bird species for the protection of livestock.

California Fish and Game Code – Lake and Streambed Alteration Agreement

The CDFW is authorized under the California Fish and Game Code, Sections 1600 to1603, to enter into a Lake and Streambed Alteration Agreement with Applicants and develop mitigation measures when a proposed Project will obstruct the flow or alter the bed, channel, or bank of a river or stream, including intermittent and ephemeral streams, where there is a fish or a wildlife resource.

California Native Plant Protection Act

The California Native Plant Protection Act (NPPA) is implemented by the CDFW in order to preserve, protect, and enhance endangered plants. Under the NPPA the California Fish and Game Commission designates native plants as endangered or rare and requires permits for collecting, transporting, or selling such plants. During CEQA review, public agencies must evaluate and disclose impacts to the 220 plant species protected under CESA and the NPPA, and in most cases must mitigate for significant impacts to these species. In addition, during the CEQA process, public agencies must also address plant species that may not be listed under CESA or the NPPA, but that meet the definition of rare or endangered.

Porter-Cologne Water Quality Control Act

The Regional Water Quality Control Board (RWQCB) regulates fill in and discharges to waters of the state, including activities in wetlands, under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. The Project area is located in the Central Coast RWQCB boundaries. The RWQCB administers the National Pollutant Discharge Elimination System (NPDES) program. Established by the CWA, the NPDES program controls and reduces pollutants entering water bodies from point and nonpoint discharges. The RWQCB issues NPDES permits for discharges to waterbodies, including general permits related to construction and industrial activity.

Additionally, a Water Quality Certification or waiver, pursuant to Section 401 of the CWA, is required from the RWQCB for USACE Section 404 permit actions, and the RWQCB issues waste discharge requirements for discharges to waters of the State that are not also waters of the United States.

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) and implementing regulations requires that the reclamation of mined lands be implemented in conformance with the following specified Performance Standards for Wildlife Habitat (CCR § 3703):

- Rare, threatened, or endangered species (listed by the CDFW or USFWS) or species of special concern (listed by the CDFW) and their habitat shall be avoided. If avoidance cannot be achieved, mitigation shall be proposed in accordance with FESA and CESA.
- Wildlife habitat shall be established on disturbed land in a condition at least as good as existed before the lands were disturbed by mining operations.
- Wetland habitat impacted because of surface mining operations shall be mitigated at a minimum ratio of one-to-one.

3.4.2.3 Local

Santa Clara County General Plan

The General Plan includes three policies that are relevant for protection of biological resources in the context of quarry development:

> ***Policy R-GD 20:*** Grading and terrain alteration to conduct lawful activities and use of property should conserve the natural landscape and resources, minimize erosion impacts, protect scenic resources, habitat, and water resources. Grading should not exacerbate existing natural hazards, particularly geologic hazards.
>
> ***Policy C-RC 28:*** The general approach to preserving and enhancing habitat and biodiversity countywide should include the following strategies:
>
> 1) Improve current knowledge and awareness of habitats and natural areas.
> 2) Protect the biological integrity of critical habitat areas.
> 3) Encourage habitat restoration.
> 4) Evaluate the effectiveness of environmental mitigations
>
> ***Policy R-RC 37:*** Lands near creeks, streams, and freshwater marshes shall be considered to be in a protected buffer area, consisting of the following:
>
> 1) 150 feet from the top of bank on both sides where the creek or stream is predominantly in its natural state;
> 2) 100 feet from the top of bank on both sides of the waterway where the creek or stream has had major alterations; and
> 3) In the case that neither (1) nor (2) are applicable, an area sufficient to protect the stream environment from adverse impacts of adjacent development, including impacts upon habitat, from sedimentation, biochemical, thermal, and aesthetic impacts.
>
> ***Policy R-RC 38:*** Within the aforementioned buffer areas, the following restrictions and requirements shall apply to public projects, residential subdivisions, and other private non-residential development:
>
> a. No building, structure or parking lots are allowed, exceptions being those minor structures required as part of flood control projects.
> b. No despoiling or polluting actions shall be allowed, including grubbing, clearing, unrestricted grazing, tree cutting, grading, or debris or organic waste disposal, except for actions such as those necessary for fire suppression, maintenance of flood control channels, or removal of dead or diseased vegetation, so long as it will not adversely impact habitat value.
> c. Endangered plant and animal species shall be protected within the area.

Tree Preservation and Removal Ordinance

Under the County of Santa Clara Tree Preservation and Removal Ordinance (County Ordinance Code, Division C16), an administrative permit is required for removal of protected trees on any private or public property in designated areas of the County. A protected tree shall consist of any of the following:

a) Any tree having a main trunk or stem measuring 37.7 inches or greater in circumference (12 inches or more in diameter) at a height of 4½ feet above ground level, or in the case of multi-trunk trees, a total of 75.4 inches in circumference (24 inches or more of the diameter) of all trunks in the following areas of the County:

    (1) Parcels zoned "Hillsides" (three acres or less);

    (2) Parcels within a "-d" (Design Review) combining zoning district;

    (3) Parcels within the Los Gatos Hillside Specific Plan Area.

b) Any tree within the "-h1" Historic Preservation zoning district for New Almaden having a main trunk or stem measuring six inches or more in diameter (18.8 inches or greater in circumference) at a height of 4.5 feet above ground level, or in the case of multi-trunk trees, a total of 12 inches in diameter (37.7 inches in circumference) of all trunks at 4½ feet above ground. For parcels having a base zoning district of "HS, Hillside" within the "-h1" combining zoning district, this provision supersedes C16-3(a)(1).

c) Any heritage tree, as that term is defined in Section C16-2.

d) Any tree required to be planted as a replacement for an unlawfully removed tree, pursuant to Section C16-17(e) of this division.

e) Any tree that was required to be planted or retained by the conditions of approval for any use permit, building site approval, grading permit, architectural and site approval (ASA), design review, special permit or subdivision.

f) On any property owned or leased by the County, any tree which measures over 37.7 inches in circumference (12 inches or more in diameter) measured 4½ feet above the ground, or which exceeds 20 feet in height.

g) Any tree, regardless of size, within road rights-of-way and easements of the County, whether within or without the unincorporated territory of the County.

County of Santa Clara Oak Woodlands Impact Guidelines

According to the Santa Clara County Planning Office Guide to Evaluating Oak Woodlands Impacts (Santa Clara Planning Office 2011), a project would have a significant impact on oak woodlands if it would result in a decrease of 0.5 acre or more of native oak canopy within oak woodland habitats in the project area. The County guidelines recommend mitigation measures for significant impacts to oak woodlands (consistent with SB 1344 and Public Resources Code Section 21083.4), which include replanting of oak trees at specified replacement ratios; protection of existing native oak trees on- or off-site through a conservation easement or dedication to the County or a land conservation group; or payment of an in-lieu fee for the preservation, restoration, or creation of oak woodland habitat.

Santa Clara Valley Habitat Plan

Six local partners (the County of Santa Clara, Santa Clara Valley Transportation Authority, Santa Clara Valley Water District, and the cities of San Jose, Gilroy, and Morgan Hill), in coordination with two wildlife agencies, the CDFW and USFWS, prepared and adopted the multi-species Santa Clara Valley Habitat Plan (VHP) in 2012 (ICF International 2012). The VHP, which is both an HCP and NCCP, primarily covers southern Santa Clara County, and portions of the City of San Jose, and addresses state and federally listed species.

The VHP maps identify suitable habitat on the Project site for the following covered species: California red-legged frog (CRLF) (breeding, refugia, and dispersal), California tiger salamander (CTS) (non-breeding habitat), western pond turtle (primary and secondary habitat), foothill yellow-legged frog (primary habitat), burrowing owl (potential nesting/overwintering), least Bell's vireo (primary habitat), tricolored blackbird (primary and secondary habitat), and San Joaquin kit fox (secondary habitat – low use).

Though the Project is within the area covered by the VHP, new quarry projects are not covered activities under the VHP or issued FESA and CESA permits. Thus, the Project could not receive take coverage under the Habitat Plan but would rather seek individual permits from CDFW, USFWS, and other resource agencies. Despite this, the VHP can be looked to for guidance on measure appropriateness with regard to impact avoidance; therefore, the Project's mitigation measures described in this Draft EIR have been developed to be as consistent as applicable with those that would be required for covered projects under the VHP.

It should be noted, however, that there is a fundamental difference in the way the VHP approaches avoidance and minimization, as opposed to habitat/species conservation, for some species, compared to more traditional approaches. For example, the VHP's conservation program for CRLF, CTS, and western pond turtle (all of which occur at Sargent Ranch) focuses on habitat conservation. Impact fees paid by covered project Applicants are used to acquire, enhance, and manage suitable habitat for these species. Although avoidance and minimization measures for aquatic habitats are required by the VHP, the plan does not require any species-specific measures, such as preconstruction surveys, construction monitoring, or relocation of individuals out of the Project site, for these three species. As a result, there may be differences between the mitigation approach for the Project and VHP-covered projects.

3.4.3 Environmental Setting

The environmental setting described in this section is based primarily on the results of survey work conducted on the site by Pacific North Western Biological Resources Consultants, Inc. (PNWB) during the period from June 2000 to May 2001 (PNWB 2002), by Live Oak Associates (LOA) during the period from July 2004 through April 2021 (LOA 2016, 2017a, 2017b, 2017c, 2021), and by H.T. Harvey & Associates in March 2017 and August 2019 (H. T. Harvey & Associates 2017a, 2017b, 2019). Surveys by PNWB and LOA included focused surveys for some special-status species, such as larval surveys for CTS and CRLF in 2000-2001, 2004, 2005, and 2017, as well as reconnaissance-level surveys, incidental observations, and habitat assessments for other species. Most surveys were conducted between March and October, and thus were conducted during the breeding season for birds and during periods in which many other special-status animals could be detected if present. These surveys were supplemented by a review of databases, such as the California Natural Diversity Database (CNDDB 2021), and literature on the occurrence of biological resources, including plants, animals, and habitat types, that could be present on the Project site. An additional field visit was conducted by LOA ecologists on April 12, 2021 to evaluate habitats that would be affected by proposed improvements to Old Monterey Highway and the U.S. 101 northbound access road, and by the proposed railroad spur (LOA 2021).

Eleven biotic habitats have been identified within the Project site as shown in **Figures 3.4-1 and 3.4-2** and summarized in **Table 3.4-1**. These habitats have been characterized using the land cover types defined in the VHP. More detailed habitat and land use descriptions are provided in the following subsections.

Site conditions may not have been completely consistent during the entire period since surveys were first initiated in 2000, as grazing management, variation in rainfall, and other factors have likely produced variability in suitability of habitat on the Project site for various special-status species. However, no large-scale perturbations of the site (e.g., large, intensive fires) have occurred in the Project area since 2000, so observations dating back as far as 2000 are still relevant to the discussion of existing conditions and assessment of impacts. Further, having surveys conducted during a number of years, and over a long time span, produces more reliable results concerning the occurrence of special-status species and other biological resources than more short-term studies by capturing some of the interannual variability that is inherent to ecological systems.

3.4.3.1 Regional

The Project site is located within the foothills of the Coast Range Mountains in southern Santa Clara County. Much of this general area is dominated largely by California annual grassland. Forested habitats, including coast live oak forest and woodland, and mixed evergreen forest, as well as northern coastal scrub/Diablan sage scrub, are also present, primarily toward the interior/higher-elevation areas of the Coast Range.

3.4.3.2 Habitat and Wildlife

California Annual Grassland

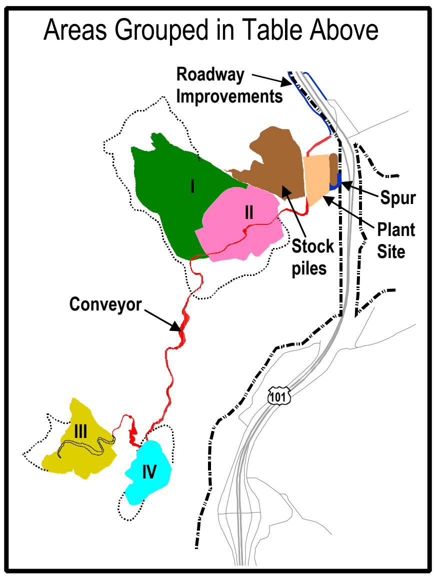
Vegetation

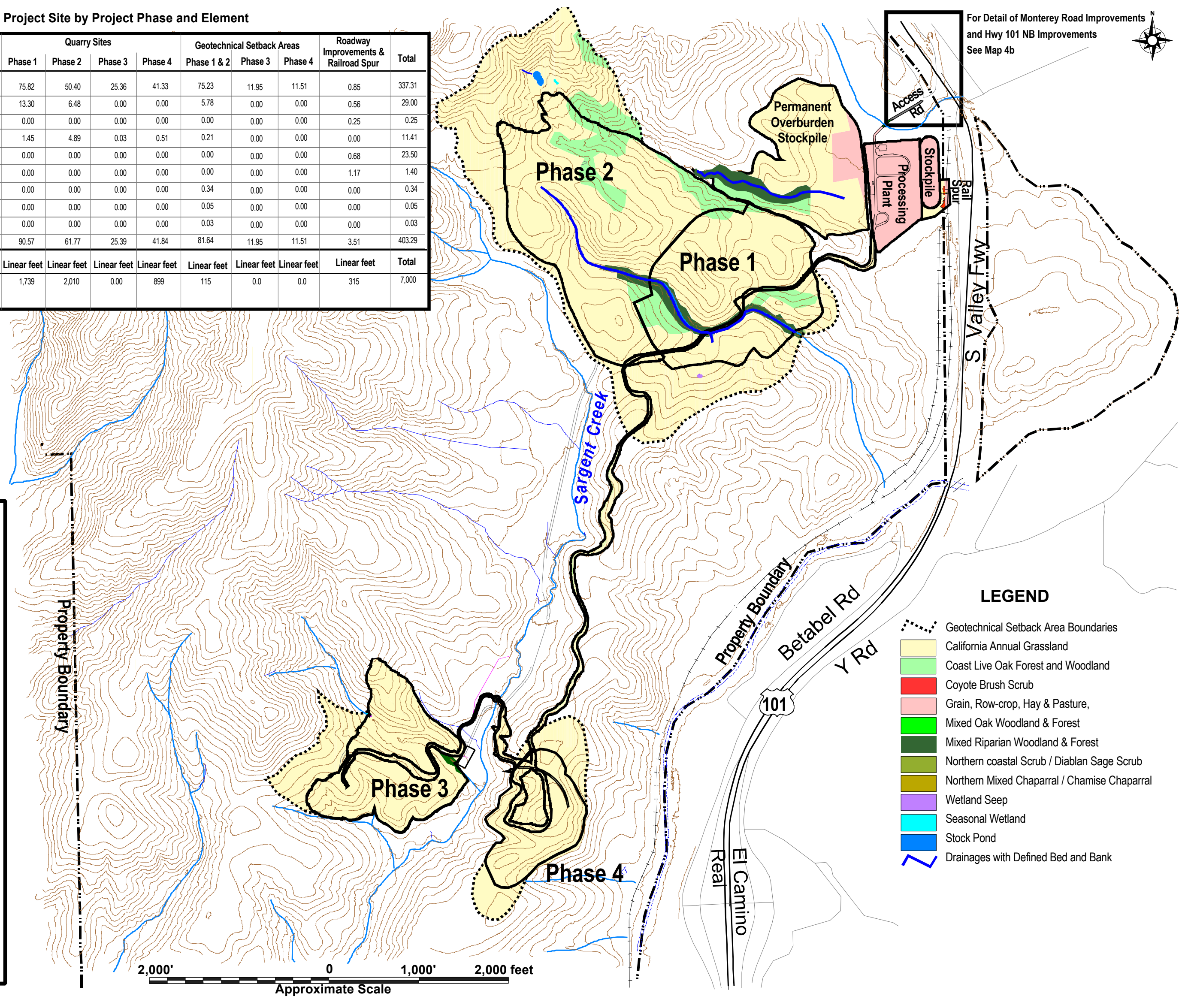
California annual grassland habitat, the most prevalent habitat covering approximately eighty-four percent (84%) of the Project site, is dominated by non-native grass species such as wild oats, ripgut, soft chess, foxtail barley, and Italian rye grass. Weedy native and non-native forb species, including filarees, black mustard, Italian thistle, and summer mustard; as well as native forb species including California poppy, common fiddleneck, Ithuriel's spear, and yarrow were also observed.

Table 2: Habitats and Land Uses of the Project Site by Project Phase and Element

Habitats / Land Uses	Plant Site	Access Road	Conveyor	Stockpiles	Quarry Sites Phase 1	Quarry Sites Phase 2	Quarry Sites Phase 3	Quarry Sites Phase 4	Geotechnical Setback Areas Phase 1 & 2	Geotechnical Setback Areas Phase 3	Geotechnical Setback Areas Phase 4	Roadway Improvements & Railroad Spur	Total
California Annual Grassland	0.04	0.00	13.69	31.13	75.82	50.40	25.36	41.33	75.23	11.95	11.51	0.85	337.31
Coast Live Oak Forest and Woodland	0.00	0.00	0.20	2.68	13.30	6.48	0.00	0.00	5.78	0.00	0.00	0.56	29.00
Coyote Brush Scrub	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25
Mixed Riparian Woodland and Forest	0.00	0.07	0.38	3.87	1.45	4.89	0.03	0.51	0.21	0.00	0.00	0.00	11.41
Grain, Row Crop, Hay & Pasture	14.24	0.12	0.01	8.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	23.50
Developed	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	1.40
Stock Pond (Existing Paved & Dirt Roads, Rural Residential & Railroad)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.34
Seasonal Wetland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.05
Wetland Seep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03
Total	14.28	0.42	14.29	46.13	90.57	61.77	25.39	41.84	81.64	11.95	11.51	3.51	403.29
Creeks, Streams, and Drainages	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Linear feet**	**Total**
Seasonal Drainages with Defined Bed & Bank (primarily HCP Category 2 Streams)	0.0	25	66	1,831	1,739	2,010	0.00	899	115	0.0	0.0	315	7,000

Sources:
Triad Holmes Assoc.
Santa Clara County HCP Land Cover
Santa Clara County LIDAR Topographic Survey
Pacific North Western Biological Resources Consultants, Inc. 2001.
Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement





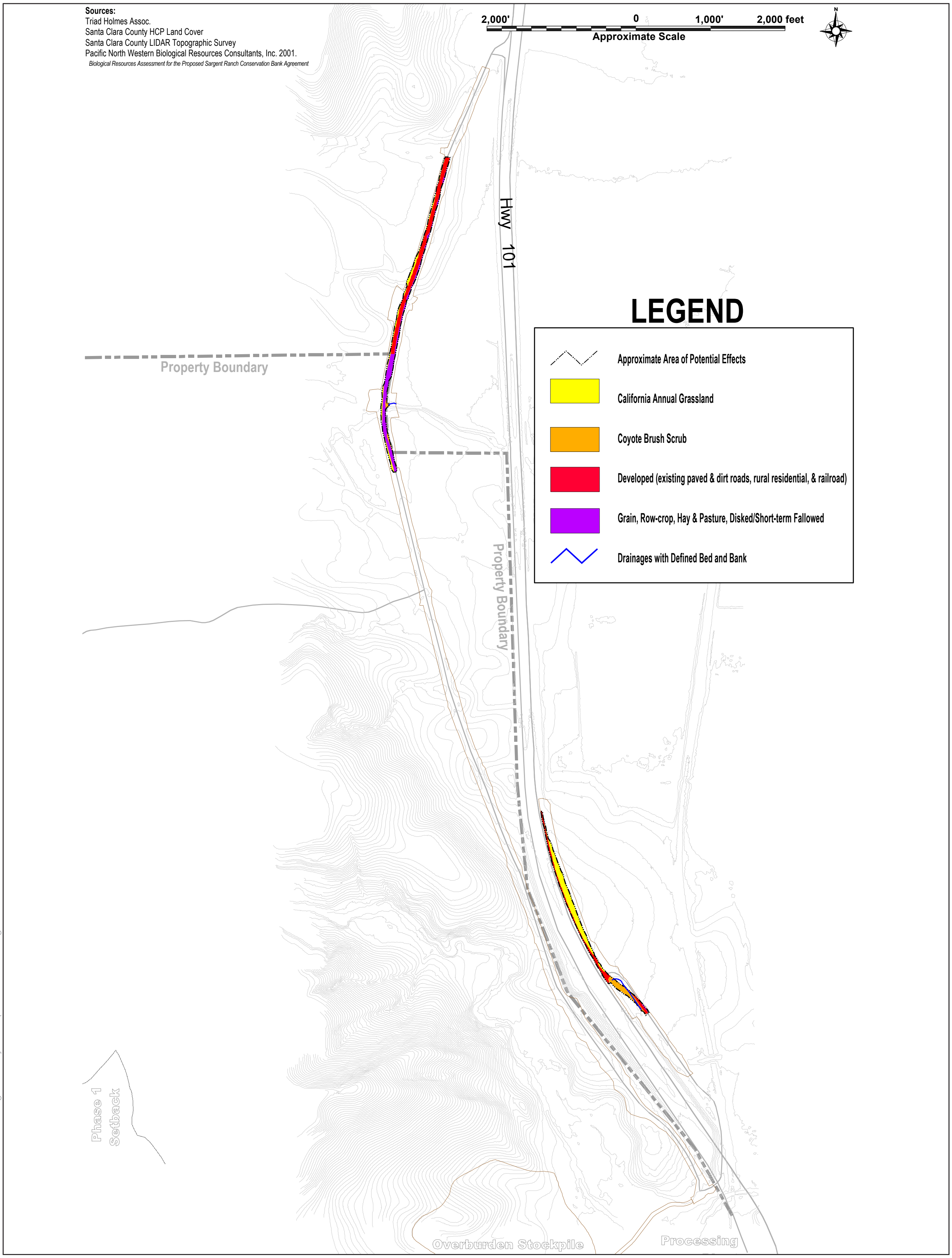
SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

SOURCE: Live Oak Associates, Inc., 2021

SCC Sargent Quarry

Figure 3.4-1
Project Area Biotic Habitats and Land Uses

ESA



SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

SOURCE: Live Oak Associates, Inc., 2021

SCC Sargent Quarry

Figure 3.4-2
Roadway Improvements Biotic Habitats and Land Uses

ESA

TABLE 3.4-1
PROJECT HABITATS AND LAND USES BY PROJECT COMPONENT/PHASES1

Habitats/Land Uses	Processing Plant, Stockpiles, Roads, Conveyor Belt	Phase 1 (acres)	Phase 2 (acres)	Phase 3 (acres)	Phase 4 (acres)	Phase 1 and Phase 2 Setback (acres)	Phase 3 Setback (acres)	Phase 4 Setback (acres)	Roadway Improvements and Railroad Spur (acres)	Total (acres)
California Annual Grassland	44.86	75.82	50.40	25.36	41.33	75.23	11.95	11.51	0.85	**337.31**
Coast Live Oak Forest and Woodland	2.88	13.30	6.48	0.00	0.00	5.78	0.00	0.00	0.56	**29.00**
Mixed Riparian Woodland and Forest	4.32	1.45	4.89	0.03	0.51	0.21	0.00	0.00	0.00	**11.41**
Coyote Brush Scrub	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	**0.25**
Grain, Row Crop, Hay and Pasture	22.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	**23.50**
Developed (dirt and paved roads, rural residential and railroad)	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	**1.40**
Stock Pond	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	**0.34**
Seasonal Wetland	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	**0.05**
Wetland Seep	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	**0.03**
Total	75.11	90.57	61.77	25.39	41.84	81.64	11.95	11.51	3.51	**403.29**
Creeks, Streams and Drainages	**Linear Feet of Channel**									
Seasonal Drainages with Defined Bed and Bank (primarily HCP Category 2 streams, but also including Tar Creek, a Category 1 stream)[2]	1,922 ft.	1,739 ft.	2,010 ft.	0	899 ft.	115 ft.	0	0	315	**7,000 ft.**

Source: Live Oak Associates, Inc., 2021

NOTES:

1 Totals are subject to slight rounding error

2 Category 1. This stream type has sufficient flow to support covered species and riparian habitat. These streams include perennial streams and some intermittent streams. These streams are typically larger than ephemeral drainages and support movement of covered species along the length of the stream. The ability of these streams to also support healthy riparian habitats bolsters the ecological value of the stream. Category 2. This stream type may not have sufficient flow to support covered species and riparian habitat. These streams include all ephemeral streams and some intermittent stream reaches. These reaches provide minimum support of water-quality functions and primary breeding habitat for covered species.

Wildlife

Reptilian species observed or expected to occur in California annual grasslands on-site include western fence lizard, western rattlesnake, gopher snake, and common garter snake. California annual grassland habitat provides foraging habitat for a number of birds. Bird species observed include great blue heron, turkey vulture, red-shouldered hawk, red-tailed hawk, golden eagle, loggerhead shrike, and great horned owl. Small mammalian species that are known to occur, include the California ground squirrel, Botta's pocket gopher, and western harvest mouse, while larger mammals using grasslands on the site include the coyote, American badger, and black-tailed deer.

Coast Live Oak Forest and Woodland

Vegetation

Oak woodlands dominated by coast live oak occur within the site's Phase 1 and Phase 2 areas, as well as within the permanent overburden stockpile area in the northern portion of the site. This habitat type is primarily associated with Intermittent Drainage Channels 3 and 4 in the mining area (described further below). Coast live oak forest and woodland at the Project site generally have a closed canopy and an understory that is either barren or covered by dense leaf litter. Little herbaceous vegetation is present.

Wildlife

Oak woodlands provide extremely important foraging, denning, nesting, cover, and roosting habitat for a variety of wildlife species. Root systems and woody debris contribute to the complexity of the woodland floor and provide foraging areas for small mammals, as well as microclimates suitable for a variety of amphibians and reptiles. Acorns are a valuable food source for many animal species, including the acorn woodpecker, western gray squirrel, and black-tailed deer. Representative animal species include arboreal salamander, southern alligator lizard, common kingsnake, opossum, and a variety of bat species including long-legged myotis, pallid bat, and western mastiff bat.

Coyote Brush Scrub

Vegetation

This habitat type occurs along portions of Old Monterey Highway, on the west side of the northbound access road, and within the proposed railroad spur alignment near the existing railroad tracks. This habitat is almost exclusively dominated by coyote brush with either a barren or California annual grassland understory, although poison oak is also associated with this habitat along the northbound access road.

Wildlife

Coyote brush scrub provides nesting habitat for several bird species, including the bushtit, lesser goldfinch, and California towhee, and provides cover for a variety of birds that forage in more open habitats such as grasslands; such birds include the white-crowned sparrow, golden-crowned sparrow, and Lincoln's sparrow, all of which occur on the site as migrants and winter residents. Coyote brush also serves as important cover for mammals and reptiles.

Mixed Riparian Woodland and Forest

Vegetation

Mixed riparian woodland and forest habitats are found in and along the margins of the active channel along intermittent and perennial streams on the Project site. Vegetation and species are similar to those found in coast live oak forest and woodland habitats, although discrete stands of red willow, arroyo willow, and mulefat occur at various locations, particularly along Sargent Creek. This type of vegetation is also found along the rail line immediately adjacent to the tracks just south of the proposed rail spur location.

Wildlife

Riparian habitats generally provide high-quality wildlife habitat due the presence of water for at least part of the year, coupled with dense vegetation. Bobcats, black-tailed deer, brush rabbits, Audubon's cottontails, coyotes, and striped skunks use these habitats for cover during dispersal. Other mammals foraging in this habitat include raccoons, ornate shrews, and deer mice. Woody debris provides cover for the arboreal salamander, Pacific treefrog, western fence lizard, western skink, and southern alligator lizard. Birds such as the Pacific-slope flycatcher, warbling vireo, black-headed grosbeak, downy woodpecker, spotted towhee, and song sparrow breed and forage in riparian habitat. Numerous other bird species use these riparian habitats for foraging and cover during migration and winter; these include the golden-crowned sparrow, white-crowned sparrow, Lincoln's sparrow, yellow-rumped warbler, and ruby-crowned kinglet.

Tar Creek, Sargent Creek, Pajaro River

Vegetation

The main access road to the quarry would traverse Tar Creek (a perennial Category 1 stream under the VHP) via a proposed free-span bridge with footings placed outside the creek channel. Mixed riparian woodland habitat is located in the vicinity of the existing at-grade creek crossing and less than 0.01 acre of this habitat is located in the area where the proposed free-span bridge would be located. Similar habitat occurs in the vicinity of the Pajaro River, but with more vertically complex riparian vegetation.

Sargent Creek is an intermittent creek, and the reach present within the proposed conveyor belt alignment would be considered a Category 2 stream under the VHP. Sargent Creek does not support significant riparian vegetation within the Project site; however, discrete stands of red and arroyo willows and mulefat do occur at various locations along the middle and upper reaches of the creek where ephemeral drainages tie into Sargent Creek near the Phase 3 mining area, and more extensive willow-dominated riparian habitat is present along lower reaches of Sargent Creek, downstream from Phases 3 and 4.

Wildlife

Steelhead have been observed to migrate and spawn in Tar Creek and the Pajaro River during years with adequate rainfall and the waterways are designated as critical habitat for this species. Although the reach of the creek in the vicinity of the proposed Project does not provide spawning habitat, this species likely migrates through this reach during wet years. Amphibian species observed within Sargent Creek and Tar Creek on the Project site include Pacific treefrogs, CRLF, and western toads. Both Sargent and Tar Creek likely function as important movement corridors for several mammal species, including but not limited to, striped skunks, gray fox, bobcat, mountain lion, wild pig, and black-tailed deer.

Although western pond turtles have not been documented in Tar Creek or Sargent Creek within the Project site, this species may occur during the wet season and could occur within the Pajaro River. Avian species observed foraging in Sargent Creek during the wet season include great blue herons, great egrets, and snowy egrets. Stick nests of the San Francisco dusky-footed woodrat were observed within the riparian woodlands of Tar Creek adjacent to the proposed free-span bridge and Pajaro River.

Stock Pond, Seasonal Wetland, and Seep Spring

Vegetation

A relatively large and deep stock pond (covering approximately 0.34 acre) occurs northwest of the Phase 2 mining area and supports herbaceous wetland vegetation at its fringes and arroyo willows where seasonal flows enter the pond from an intermittent channel.

A small (approximately 0.05 acre) seasonal wetland occurs immediately east of the stock pond and was likely created as a result of overflow from the stock pond. This feature was observed to support herbaceous wetland vegetation and meets the USACE and state criteria for jurisdictional wetlands.

A small (0.03 acre) seep spring occurs on the hillside south of the Phase 1 mining area, in the geotechnical setback area. This feature supports wetland vegetation, including cattails and other herbaceous wetland species, and appears to be a perennial or semi-perennial seep. A similar seep is present in the Phase 3 geotechnical setback.

Wildlife

These aquatic and wetland habitats support several wetland animal species. In June 2017, juvenile CRLF and juvenile California newts were observed within the stock pond, which provides a near year-round source of water for wildlife and amphibians. Pacific treefrogs, western toads, and common garter snakes occur in these features. The stock pond would be used for foraging by waterbirds such as mallards, American coots, and great blue herons.

Grain, Row-Crop, Hay and Pasture, Disked/Short-Term Fallowed

Vegetation

Dry-farmed oat hay fields occur in the footprint of the proposed processing plant area and rail spur near U.S. 101. Vegetation similar to that occurring in California annual grasslands (described previously) was observed along the disturbed edges of the fields.

Wildlife

Wildlife using these oat hay fields will be similar to those using the California annual grasslands as described above. In addition, wildlife associated primarily with adjacent habitats would also use this habitat for foraging and movement.

Developed (paved and dirt roads)

Vegetation

Developed roadways consist of concrete or asphalt hardscape and packed dirt roads. Vegetation within these areas is limited to roadside grasses and weeds.

Wildlife

These developed areas provide relatively little habitat value for most wildlife species. Wildlife from adjacent habitats may forage on these roads, and dispersing animals will move along these roads as well.

Intermittent and Ephemeral Drainages

Vegetation

Unnamed intermittent and ephemeral drainages (that may be considered VHP Category 2 streams) occur within the Phase 1, Phase 2, and Phase 4 areas of the Project site, and Tick Creek would be impacted by access road improvements along Old Monterey Road. Drainages and other hydrologic features are shown in Figure 3.4-1. Vegetation within the intermittent drainages is generally similar to that habitat found in the surrounding upland California annual grassland habitats. The unnamed ephemeral drainages only have water present for brief periods during and immediately after rainstorms and therefore would not be a significant source of seasonal water for native plants and wildlife. Intermittent drainages derive some flow from groundwater as well, so they may flow for a longer duration than ephemeral drainages, but they are typically dry for much of the year.

Wildlife

Ephemeral drainages would not likely provide habitat values in excess of those provided by surrounding upland habitats due to their short hydroperiod. As a result, the animal species utilizing these features would be similar to those using adjacent habitats. Intermittent drainages may receive somewhat greater use by amphibians and waterbirds, but the intermittent Category 2 streams on the Project site would not provide suitable conditions for use by breeding amphibians.

3.4.3.3 Regulated and Sensitive Habitats

Regulated Habitats

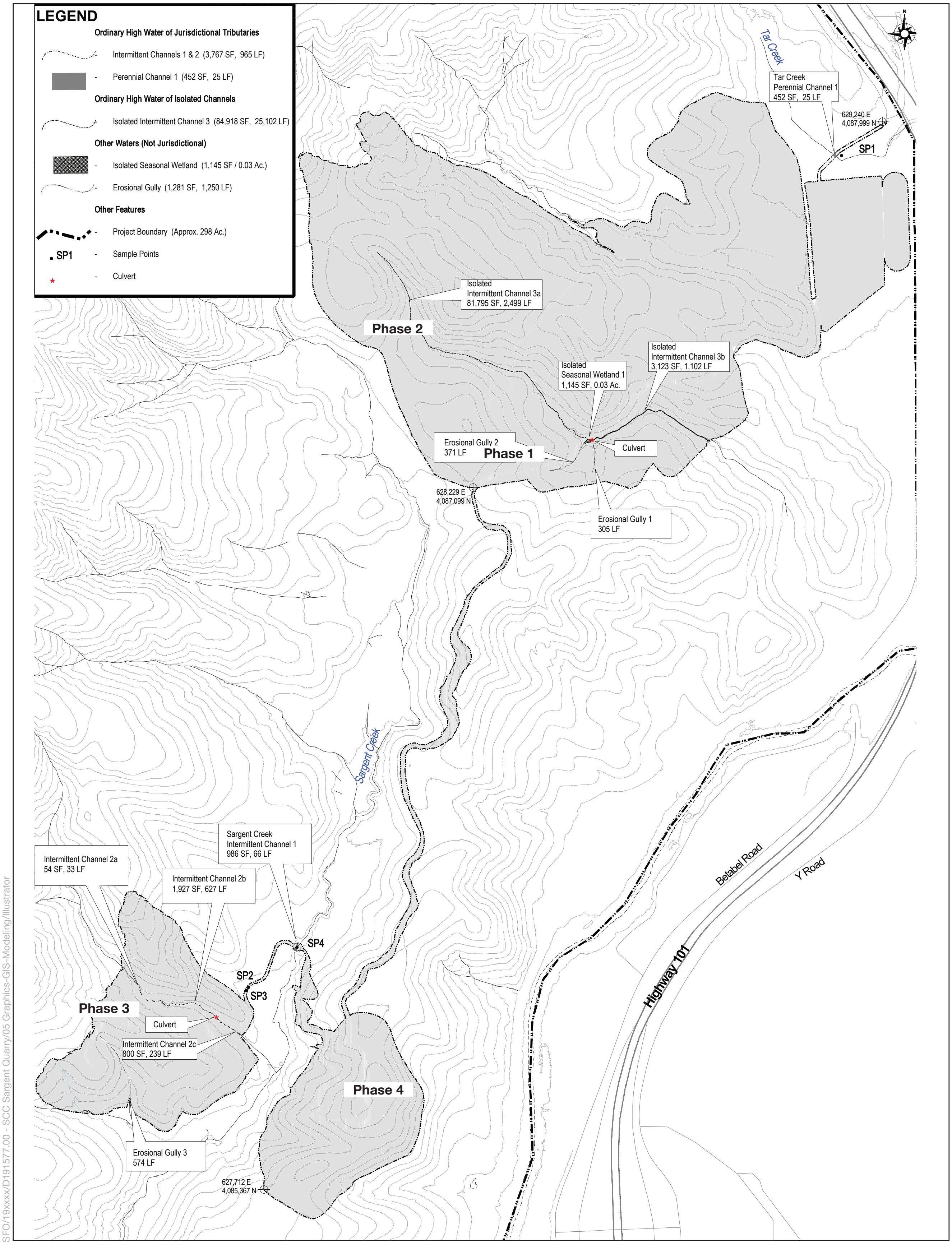
Some features on the Project site would be regulated by the USACE as "waters of the U.S.," by the Central Coast Regional Water Quality Control Board (RWQCB) as "waters of the State," and by the CDFW under Section 1600 of the California Fish and Game Code. A wetland delineation was conducted on the proposed quarry site in fall 2016 (LOA 2016), and a verification site visit was conducted with USACE staff in spring 2017. During the verification site visit, USACE claimed the following as jurisdictional waters: Intermittent Drainage Channels 1 through 4; a small seasonal wetland within Intermittent Drainage 3; Sargent Creek; and Tar Creek (as shown in Figure 3.4-3). An additional formal wetland delineation survey was conducted for the geotechnical setback areas in summer 2017, but this has not yet been verified by USACE. These delineations were performed according to the pre-2015 USACE regulatory regime incorporating guidance from important court cases such as Rapanos v. United Stated, but prior to the since-superseded 2015 Clean Water Rule or the currently vacated 2020 Navigable Waters Protection Rule.

The Phases 1 and 2 geotechnical setback areas support hydrologic features that may also be considered jurisdictional by the USACE. These hydrologic features include wetland seeps near Phase 1, a short reach of intermittent channel, a stock pond, and a small seasonal wetland north of Phase 1. No potentially jurisdictional features are present within the Phases 3 and 4 geotechnical setback areas.

All the features that are likely to be considered waters of the U.S. by the USACE would also be considered jurisdictional waters of the State by RWQCB. In addition, if the USACE determines that any ephemeral drainages are not waters of the U.S., these features may be waters of the State. All streams and drainages on the site would also likely be considered jurisdictional by CDFW, and both CDFW and RWQCB may claim jurisdiction over associated riparian habitat. The jurisdiction of CDFW and RWQCB may extend to the top of the bank or the outer dripline of associated riparian vegetation, whichever is greater. Potential jurisdictional waters are shown in **Figure 3.4-3**.

Other Sensitive Habitats

In addition to the regulated habitats described above, some habitats and plant communities are considered sensitive by virtue of their limited distribution or disproportionate contributions to biodiversity. On the Project site, oak woodlands would be considered sensitive. Numerous state and local agencies have established guidelines, regulations, and ordinances regarding the conservation of oak woodlands (e.g., Oak Woodlands Conservation Act [Fish and Game Code Sections 1360–1372], Senate Bill 1334, and the Santa Clara County Guidelines for Tree Protection and Preservation for Land Use Applications (Santa Clara County 2010). Areas on the Project site mapped as coast live oak forest and woodland meet the definition of oak woodland because of their size, tree density, and connection to adjacent oak woodland off the Project site.



SOURCE: Live Oak Associates, Inc., 11/30/2020

SCC Sargent Quarry

Figure 3.4-3
Potential Waters of the United States

ESA

3.4.3.4 Special-Status Species

Special-status species are plants and animals that are legally protected under FESA, CESA, or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. For purposes of this EIR, special-status plants include the following:

- Plants listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Plants listed under CESA as threatened, endangered, rare, or a candidate species.
- Plants listed by the California Native Plant Society as California Rare Plant Rank (CRPR) 1A, 1B, 2, 3, or 4.

For purposes of this EIR, special-status animals include the following:

- Animals listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Animals listed under CESA as threatened, endangered or a candidate threatened or endangered species.
- Animals designated by the CDFW as a California species of special concern.
- Animals listed in Sections 3511, 4700, 5050, or 5515 the California Fish and Game Code as fully protected species.

Information concerning threatened, endangered, and other special-status species that occur in the vicinity of the Project site was collected from several sources and reviewed to develop a list of species that could occur on the Project site. Species observations in the Project area are shown on Figures 3.4-5 and 3.4-6. The specific habitat requirements and the locations of known occurrences of each special-status species were the principal criteria used for inclusion in the list of species that could occur on the site.

Special-Status Plants

Of the special-status plant species that could occur in the region, most are considered absent from the site due to a lack of suitable habitat, such as serpentine grasslands, wetlands, or vernal pools. The Project site provides suitable habitat for 10 special-status plant species, as shown in **Table 3.4-2**.

Special-Status Wildlife

The legal status and likelihood of occurrence of special-status animal species known to occur or that could occur in the Project site are listed in Appendices E.3, E.4, and E.5 of this EIR. Many of the special-status animal species known to occur or that could occur in the broader vicinity of the Project site would not occur on the Project site itself because it lacks suitable habitat or is outside the known distribution of the species. Several special-status animal species are known or expected to breed or roost regularly in the vicinity and may forage on the Project site, but these species would not breed specifically within the Project site due to the absence of suitable nesting habitat (e.g., bald eagle, golden eagle, and peregrine falcon). **Table 3.4-3** discusses special-status animals that are known to occur in the region and explains whether or not they would occur on or near the Project site. **Figures 3.4-4 and 3.4-5** depict species observations at Sargent Ranch and CNDDB records of special-status species in the site vicinity, respectively. Expanded discussions of several species and their potential to occur follow.

TABLE 3.4-2
POTENTIALLY OCCURRING SPECIAL-STATUS PLANT SPECIES

Name	Status	Blooming Period	Habitat
Congdon's tarplant	CRPR 1B	May – November	Alkaline soils within the valley and foothill grasslands
Bristly leptosiphon	CRPR 4.2	April – July	Grassy, woodland, and chaparral areas
California androsace	CRPR 4.2	March – June	Chaparral, foothill woodland, norther coastal scrub, and coastal sage scrub areas
Cotula navarretia	CRPR 4.2	May – June	Chaparral, foothill woodland, valley grassland, and wetland-riparian areas
Gairdner's yampah	CRPR 4.2	June – October	Chaparral, valley grassland, mixed evergreen forest, freshwater wetlands, and wetland-riparian areas
Michael's rein orchid	CRPR 4.2	April – August	Foothill woodland, yellow pine forest, northern coastal scrub, coastal sage scrub, and closed-cone pine forest areas
Satan's goldenbush	CRPR 4.2	August – October	Foothill woodland and wetland-riparian areas
Stinkbells	CRPR 4.2	March – June	Chaparral, valley grassland, foothill woodland, and wetland-riparian areas
Vernal barley	CRPR 4.2	March – June	Valley grassland, freshwater wetland, and wetland-riparian areas
Santa Clara red ribbons	CRPR 4.3	May – June	Foothill woodland areas

NOTES:
CRPR 1B: Plants are rare, threatened, or endangered in California and elsewhere
CRPR 4: Plants have a limited distribution – a watch list

Invertebrates

Bay Checkerspot Butterfly

The federally threatened Bay checkerspot butterfly occurs in serpentine grasslands, primarily along the edges of the Santa Clara Valley. This species is found only where its larval host plants, dwarf plantain (*Plantago erecta*) and owl's clover (*Castilleja densiflora* or *Castilleja exserta*), are common. Grasslands on soils derived from serpentinite rock are present in a number of areas in central and southern Santa Clara County (**Figure 3.4-6**). These serpentine grasslands are highly infertile because of their extremely high levels of magnesium, chromium, and nickel; low concentrations of nutrients such as calcium and nitrogen; and low water-holding capacity. A unique group of vascular plant species, which can tolerate the relatively high magnesium to calcium ratio, has evolved in response to these conditions. Many exotic species in California, including the non-native grasses that have invaded much of the non-serpentine grasslands in the state, have poor ability to tolerate the extremely dry conditions and infertility of serpentine soils. As a result, serpentine grasslands support high-quality native plant communities, including rare plants such as the federally endangered Santa Clara Valley dudleya, Metcalf Canyon jewelflower, and Tiburon Indian paintbrush. In turn, several invertebrate species, including the federally threatened Bay checkerspot butterfly, depend on serpentine grasslands because their host foodplants are found primarily in these habitats.

TABLE 3.4-3
POTENTIALLY OCCURRING SPECIAL-STATUS WILDLIFE SPECIES

Species Name	Status	Habitat	Potential to Occur
Invertebrates			
Bay checkerspot butterfly	FT	Native grasslands on serpentine soils. Larval host plants are *Plantago erecta* and/or *Castilleja* sp.	**Absent.** No suitable habitat is present on or very close to the Project site, which lacks serpentine grasslands, and no individuals were observed during site surveys.
Fish			
South-Central California Coast steelhead	FT	Migrates up freshwater rivers or streams in the spring and spend the remainder of the time in the ocean, known to occupy Tar Creek and the Pajaro River (which are designated as critical habitat for the species)	**Present.** The species occurs in Tar Creek within the Project site.
Monterey roach	CSC	Occurs in a variety of streams, and well adapted to intermittent watercourses (e.g., tolerant of high temperatures and low oxygen levels).	**Possible.** Tar Creek provides suitable habitat, and the species could occur there year-round. May also occur in lower reaches of Sargent Creek, downstream from the Project site, when water is present.
Monterey hitch	CSC	Warm, lowland, waters including clear streams, turbid sloughs, lakes, and reservoirs. Has a high tolerance for varying stream conditions and water temperature.	**Possible.** Tar Creek provides suitable habitat, and the species could occur there year-round. May also occur in lower reaches of Sargent Creek, downstream from the Project site, when water is present.
Amphibians			
California tiger salamander	FT, CT	Breeds in vernal pools and stock ponds, adults use refugia in grassland habitats adjacent to the breeding sites	**Present.** Four CTS and CRLF larval surveys have been conducted within potentially suitable breeding habitats in the vicinity of the proposed Project site (one by PNWB in 2000-2001 and three by LOA in 2004, 2005 and 2017). These surveys detected successful breeding only in two ponds north of Tar Creek, more than 2000 feet north of the quarry site. The only detection on the Project site was of larvae in a seasonal wetland in Phase 1, though the pool did not hold water long enough for breeding to be successful. Therefore, the species is not known to have bred successfully anywhere on the Project site. The stock pond in the Phase 2 geotechnical setback area and a pond along Sargent Creek immediately south of the Phase 4 mining area have been sampled, and no CTS have been detected there, though they could potentially be used by breeding CTS. Although the species could use upland habitat anywhere on the Project site for dispersal and refugia, the species is apparently very scarce in the Project site vicinity.
California red-legged frog	FT, CSC	Rivers, creeks and stock ponds of the Sierra foothills and Bay Area, preferring pools with overhanging vegetation	**Present.** Juveniles were observed within a pond in the geotechnical setback area above Phase 2, and the species has been documented in riparian and pond habitats at numerous locations on Sargent Ranch, including in close proximity to the proposed conveyor belt crossing and in the vicinity of the proposed crossing for the main quarry access road. Suitable foraging, dispersal, and breeding habitat is present within the Project site.

TABLE 3.4-3 (CONTINUED)
POTENTIALLY OCCURRING SPECIAL-STATUS WILDLIFE SPECIES

Species Name	Status	Habitat	Potential to Occur
Amphibians (cont.)			
Foothill yellow-legged frog	SE	Creeks and rivers in a variety of habitats, usually with cobbly substrate	**Absent.** None of the creeks on or adjacent to the Project site have the cobbly substrate typically present where this species occurs, and there are no known occurrences in the Project vicinity.
Reptiles			
Western pond turtle	CSC	Open slow-moving water of rivers and creeks of central California with rocks and logs for basking	**Possible.** Tar Creek and the lower reaches of Sargent Creek provide suitable aquatic habitat for this species, and turtles may occur infrequently in upland areas during movements between suitable aquatic habitats. It is possible that western pond turtles could also occur in the stock pond in the Phase 2 geotechnical setback area and a pond along Sargent Creek immediately south of the Phase 4 mining area, though the species has not been recorded in these ponds during multiple herpetological surveys conducted at Sargent Ranch (LOA 2017a, 2017b), so it does not occur there regularly or in large numbers, if at all. It is possible that the species could nest in low numbers on the site.
Birds			
Bald eagle	SE	Nests and roosts near water bodies with consistent fish supply (eagle's main food source), builds nests in tall trees or on cliffs	**Possible.** Suitable nesting habitat is absent from the Project area, but individuals may occur as foragers.
Bank swallow	CT	Colonial nester on vertical cliffs and banks near riparian or coastal habitats, requires sandy soils to excavate nest holes	**Possible.** Suitable foraging habitat is present on the Project site and the species has been recorded on the site as a forager, but the species does not currently nest anywhere in Santa Clara County or elsewhere in the site vicinity.
Least Bell's vireo	FE, CE	Occurs in southern California during the breeding season in March, migrates out of the state July through September, prefers dense brush, mesquite, or cottonwood-willow forests in riparian areas	**Unlikely.** Suitable habitat is not present within the Project site, and it is highly unlikely that this species would occur on the Project site even as an occasional dispersant or forager due to the lack of high-quality habitat and the sporadic nature of this species' occurrence anywhere in the region.
Tricolored blackbird	CE	Breeds near fresh water in dense emergent vegetation	**Possible.** The species has not been recorded in the Project site; however, it has been recorded on the larger Sargent Ranch, and suitable nesting and foraging habitat is present on the Project site. A stock pond in the geotechnical setback area of Phase 2, a pond adjacent to the Phase 4 mining area, and a seep within the setback area of Phase 1 provide suitable nesting habitat.
White-tailed kite	CP	Open grasslands and agricultural areas throughout central California	**Possible.** Suitable nesting and foraging habitat is present on the Project site.
Peregrine falcon	CP	Requires cliffs for nesting and forages in a variety of habitats	**Possible.** Nesting habitat is not present on the Project site; however, suitable foraging habitat is present, and the species has been observed over Sargent Ranch.

TABLE 3.4-3 (CONTINUED)
POTENTIALLY OCCURRING SPECIAL-STATUS WILDLIFE SPECIES

Species Name	Status	Habitat	Potential to Occur
Birds (cont.)			
Golden eagle	CP	Typically frequents rolling foothills, mountain areas, sage-juniper flats, and desert	**Possible.** Woodlands on the Project site provide marginal nesting habitat for this species. Golden eagles have been observed foraging over Sargent Ranch and are presumed to forage on the Project site on a regular basis, though they are unlikely to nest in the Project site due to the absence of high-quality nest sites.
Northern harrier	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands, uncommon in wooded habitats	**Present.** This species has been observed foraging over grasslands on the Project site, and potential nesting habitat occurs adjacent to Sargent Creek.
Short-eared owl	CSC	Occurs in wide open spaces including marshes, open shrublands, grassland, prairie, and agricultural field habitats, and need dense ground cover to conceal nests	**Possible.** The Project site supports suitable foraging habitat for this species, though this species is not known to nest anywhere in the Project site vicinity.
Long-eared owl	CSC	Found throughout California mainly in open woodlands, and riparian areas with adjacent grasslands for foraging.	**Possible.** The Project site supports suitable foraging habitat for this species, though no high-quality nesting habitat is present in the Project site.
Burrowing owl	CSC	Found in open, dry grasslands, deserts, and ruderal areas. Requires suitable burrows associated with California ground squirrels	**Possible.** Suitable nesting and foraging habitat is present on the Project site, and owls have been observed nesting on the greater Sargent Ranch property in the past. However, the species is not currently known to breed in the South County. The majority of the Project site is likely used primarily, or solely, by wintering owls.
Grasshopper sparrow	CSC	Forages in open grasslands, builds a nest of grasses on the ground	**Possible.** Suitable nesting and foraging habitat is present on the Project site, and the species has been observed breeding on the greater Sargent Ranch property.
Bryant's savannah sparrow	CSC	Breeds and forages in grasslands and other open habitats	**Possible.** Suitable nesting and foraging habitat is present on the Project site, and the species has been observed breeding in foothill grasslands in western Santa Clara County.
Yellow warbler	CSC	Forages and nests in riparian woodland habitats	**Possible.** Suitable nesting and foraging habitat is present on the Project site.
Loggerhead shrike	CSC	Nests in tall shrubs and dense trees, forages in grasslands, marshes, and ruderal habitats	**Possible.** Suitable nesting and foraging habitat is present on the Project site.
Mammals			
Mountain lion	CC	Occurs in a variety of habitats, denning in areas of dense cover	**Possible.** The species has not been recorded on the Project area, but it has been recorded on the larger Sargent Ranch and likely occurs on the Project site, either while foraging or during dispersal.
Western red bat	CSC	Roosts primarily in trees in a wide variety of habitats, prefers a mosaic of habitats including open areas for foraging	**Possible.** The species does not breed in the Project site vicinity; however, trees on the site provide potential roosting habitat and the species may forage over the Project site.
Pallid bat	CSC	Most common on dry, open habitats with rocks for roosting, may also use large hollows of trees in addition to caves for roosting	**Possible.** The Project site offers suitable foraging habitat for this species and roosting habitat may be available in woodlands that support large, cavernous hollows.

**TABLE 3.4-3 (CONTINUED)
POTENTIALLY OCCURRING SPECIAL-STATUS WILDLIFE SPECIES**

Species Name	Status	Habitat	Potential to Occur
Mammals (cont.)			
California mastiff bat	CSC	Forages over many habitats, requires tall cliffs or buildings for roosting	**Unlikely.** Suitable foraging habitat occurs on the Project site, but roosting habitat is absent.
Townsend's big-eared bat	CSC	Requires caves, mines, tunnels, buildings, or other human-made structures for roosting, may use separate sites for night, day, hibernation, or maternity roosts	**Unlikely.** Suitable roosting habitat is absent from the Project site; however, this species may forage over the site.
San Francisco dusky-footed woodrat	CSC	Found in hardwood forests, oak riparian, and shrub habitats	**Possible**. Suitable habitat is present on the Project site and the species' nests have been observed in the vicinity of the proposed Tar Creek crossing.
American badger	CSC	Occurs in grasslands, and open areas of scrubland and forests with uncultivated soils	**Possible.** Suitable habitat is present on the Project site and the species has been observed on the greater Sargent Ranch property.

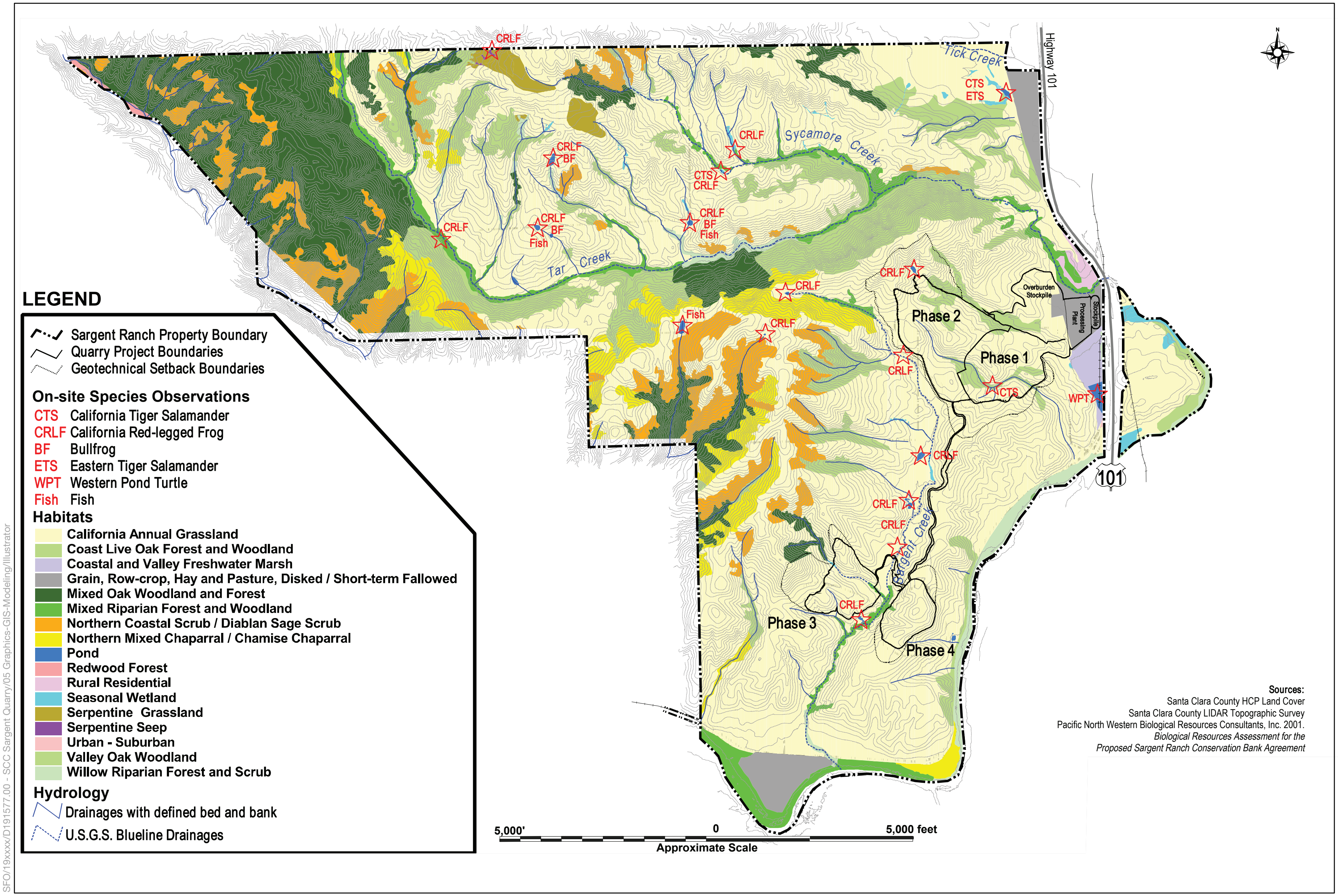
NOTES:
FT: Federally threatened
FE: Federally endangered
CT: California threatened
CE: California endangered
CC: California candidate for listing
CP: California fully protected
CSC: California species of special concern

No suitable habitat for the Bay checkerspot butterfly is present on or very close to the Project site, which lacks serpentine grasslands, and no individuals were observed during site surveys. However, suitable habitat (including areas designated as critical habitat by the USFWS) is present on both sides of the Santa Clara Valley to the north, between the San Martin/Morgan Hill area and southern San Jose. The conservation of critical habitat is considered essential for the conservation of a federally listed species. Critical habitat for the Bay checkerspot butterfly occurs on nutrient-poor serpentine or serpentine-like grasslands that support at least two of the three butterfly's larval native host plants. Non-native grasses have been reported to increase in these habitats, crowding out the native forbs needed by the Bay checkerspot butterfly, primarily due to increased nitrogen deposition from human sources (primarily vehicle trips).

Fish

South-Central California Coast Steelhead

Adult steelhead typically enter streams from the ocean with the winter rains and ascend the stream to a suitable site where they pair up and dig a nest. Females lay from 200 to 12,000 eggs, which are fertilized by males. The eggs hatch after approximately two months. Juvenile fish remain in stream habitats for one to four years, before undergoing a physiological change that allows them to enter the ocean where they spend one to four years feeding. The steelhead then return to their natal streams to spawn and repeat the life cycle. The species is federally threatened due to an eighty-five percent (85%) decline in fish stocks between 1960 and 1997. These declines are presumed to be associated with negative effects caused by water development projects, predation, modification of spawning streams, and overfishing.

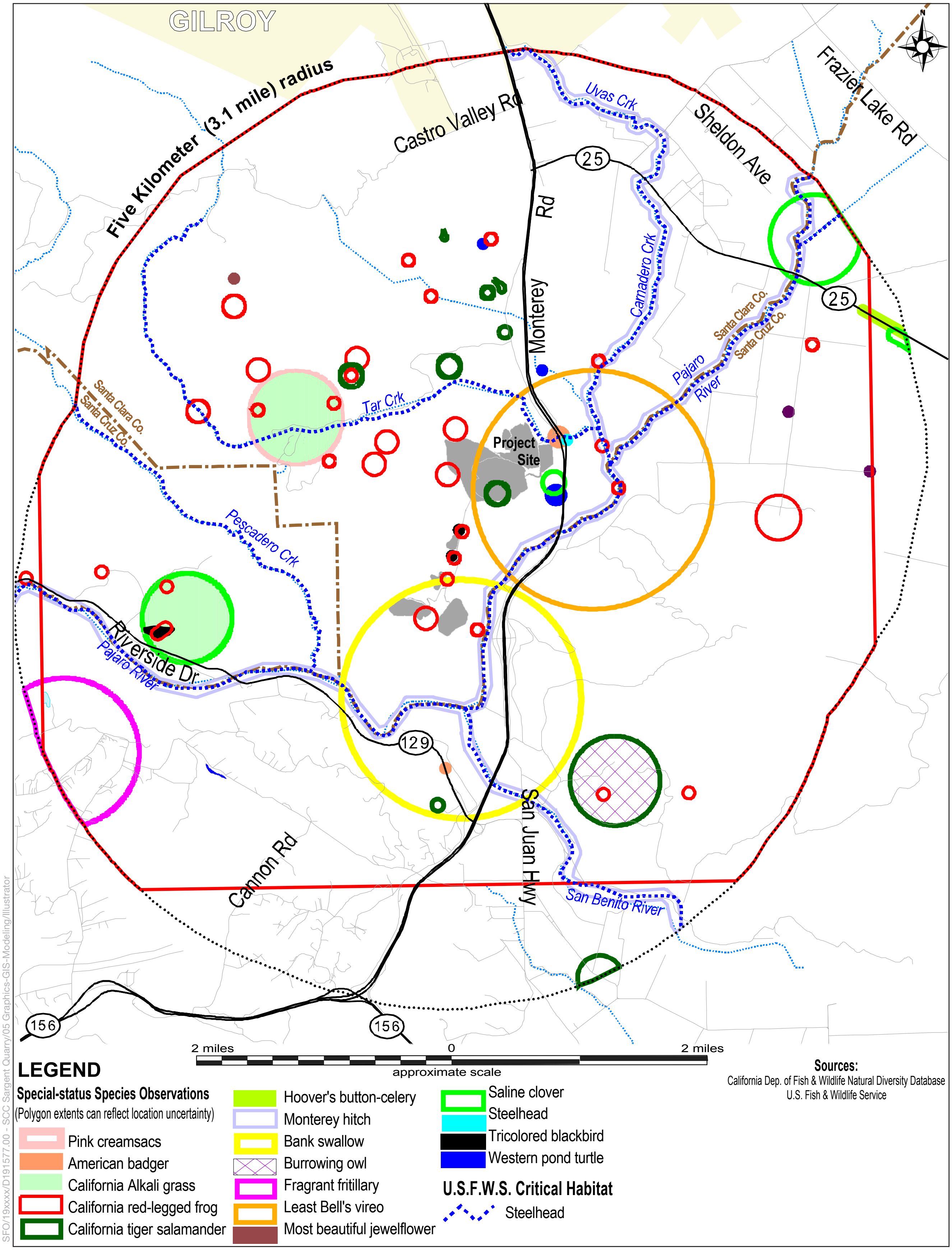


SOURCE: Live Oak Associates, Inc., 2021

SCC Sargent Quarry

Figure 3.4-4
Species Observations in the Project Site and Vicinity

ESA

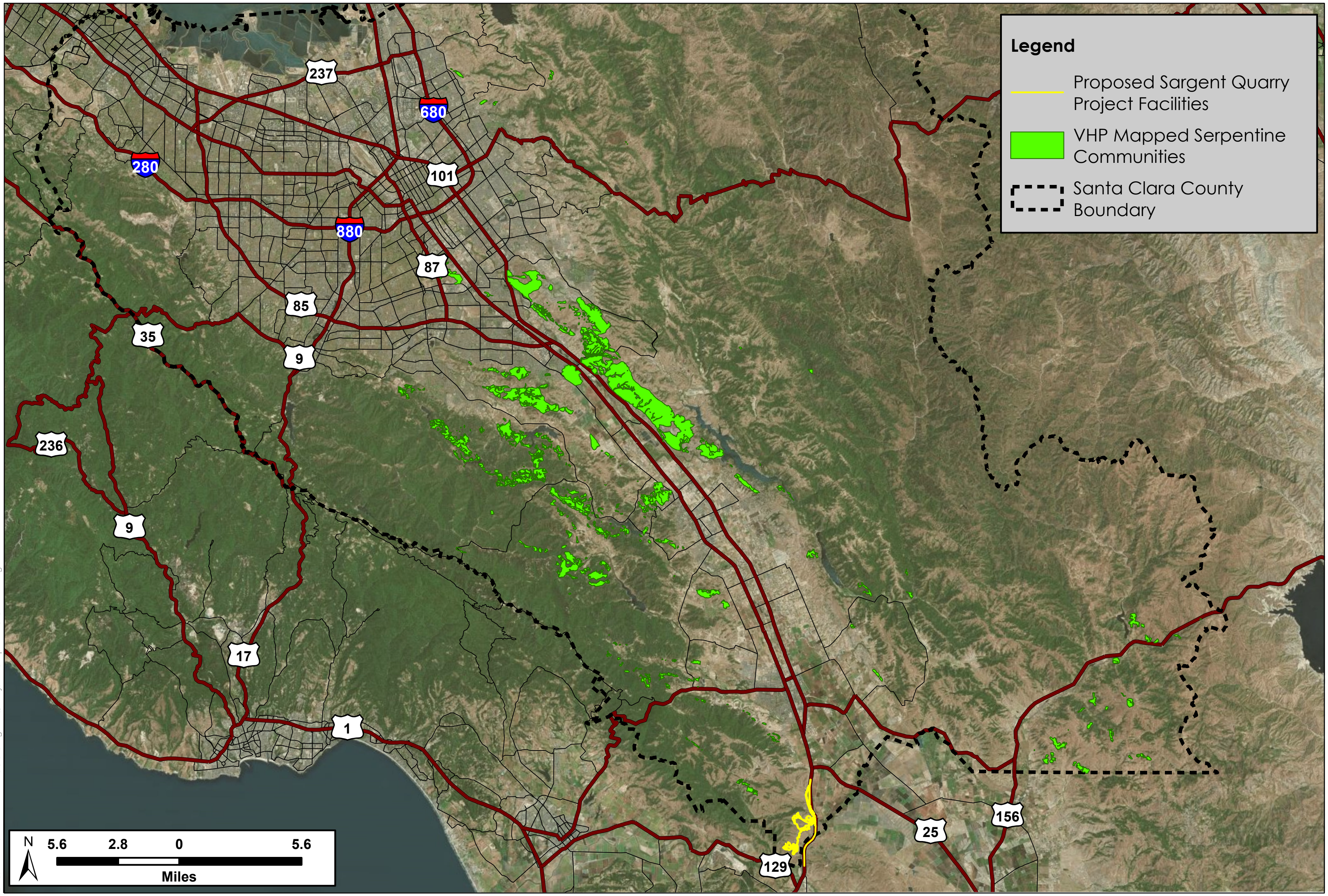


SOURCE: Live Oak Associates, Inc., 2021

SCC Sargent Quarry

Figure 3.4-5
CNDDB Special-Status Species Occurrences

ESA



SOURCE: H.T. Harvey & Associates, 2021

SCC Sargent Quarry

Figure 3.4-6
Mapped Serpentine Communities in Santa Clara County

ESA

Steelhead are present in Tar Creek and the Pajaro River. The Project site occurs in an area considered a high priority for conservation for the species, and Tar Creek and the Pajaro River have been designated as critical habitat for steelhead.

Monterey Roach and Monterey Hitch

The Monterey roach is a California species of special concern, and one of several subspecies of the widespread California roach. It is a small, stout-bodied minnow with a deeply forked tail that rarely grows any bigger than 100 millimeters in length. This species is most abundant in warm streams, where it grazes on filamentous algae, but it also feeds on invertebrates. Roach are well adapted to intermittent watercourses, as they are tolerant of high temperatures and low oxygen levels. Spawning typically occurs in March through early July in small rock substrates, where females lay their eggs, which are then immediately fertilized. Eggs hatch after 2–3 days, after which the larvae remain in gravel beds, and also dense aquatic vegetation, where they develop before being able to swim and disperse. The species as a whole is a habitat generalist, much like other California roach subspecies; it may occur in a wide variety of aquatic habitats and is tolerant of human-altered streams.

The Monterey hitch is also a California species of special concern. Monterey hitch occur in a wide variety of waterbodies, including clear streams, turbid sloughs, lakes, and reservoirs. The species has a high tolerance for varying stream conditions and water temperature, being able to withstand water temperatures higher than those tolerated by many other native fish.

Both the Monterey roach and Monterey hitch occur in the Pajaro River watershed, and they likely occur in the on-site reach of Tar Creek. These species could also occur in the lower reaches of Sargent Creek (downstream from the Project site) when that stream contains water; however, the reaches of Sargent Creek adjacent to the Project site are intermittent, and fish would not occur in this creek upstream as far as the Project site.

Amphibians

California Tiger Salamander (CTS)

The CTS is an endemic member of the California grassland community. Its preferred breeding habitat consists of temporary (minimum of three to four months), ponded environments surrounded by uplands that support small mammal burrows. Ponds provide breeding and larval habitat, while burrows of small mammals, such as California ground squirrels, in upland habitats provide refugia for juvenile and adult CTS during the dry season. After autumn rains commence, the salamanders emerge from aestivation and begin nocturnal migrations, congregating at breeding sites. Following metamorphosis, juveniles leave the drying ponds in late spring or summer and move at night to upland refugia. Juveniles and adults emerge from refugia on cool, moist, or foggy nights to feed on a wide variety of invertebrate and small vertebrate prey. Figure 3.4-4 shows the locations where CTS were found on Sargent Ranch, and detailed survey results are included within Appendices E.3 and E.4. CNDDB records are shown in Figure 3.4-5.

The proposed Project area does not support ponds or other hydrologic features that have an ideal hydrologic regime (i.e., ponding at least through May in an average rainfall year, but then drying out until the following wet season) to support successful CTS breeding. However, several ponds occur in the vicinity of the site, and the geotechnical setback areas for Phases 1 and 2 support a wetland seep and a stock pond. During a CTS and CRLF larval survey conducted in 2000 and 2001, the presence of successful breeding populations of CTS was confirmed in two locations on the greater Sargent Ranch property. These successful breeding locations included the pond/seasonal wetland complex in the northeastern corner of Sargent Ranch in a pond/wetland complex near Tick Creek and within a pond adjacent to Sycamore Creek, a tributary of Tar Creek (both approximately 0.85 mile north of the Project area, or 4,500 feet). In 2005, CTS were again found successfully breeding in a pond/wetland complex south of Tick Creek. During 2017 surveys, what was believed to be CTS hybrids[1] were found on the larger Sargent Ranch property, although none were collected for genetic testing, and no tiger salamanders of any kind were found in the Project area.

CTS larvae were also observed in 2000 and 2001 surveys within a seasonal wetland upstream of a culvert of Intermittent Channel 3 within the Phase 1 mining area; however, the seasonal wetland dried up before larvae had a chance to metamorphose and move to upland habitats. Although this feature has been confirmed to dry up by early spring and therefore does not provide suitable breeding habitat, the presence of larvae is evidence that CTS can move into the Project area from another breeding habitat area, despite the distance to the nearest known breeding pond. The stock pond in the Phase 2 geotechnical setback area is perennial, and therefore does not provide ideal conditions for successful breeding by CTS. Although this pond has been sampled and has not been found to support CTS (LOA 2017b), it could, however, still provide a CTS breeding location. Similarly, a pond along Sargent Creek, between the creek and the Phase 4 mining area, is apparently perennial and was sampled with negative results for CTS (LOA 2017b), though it could also potentially support the species. In addition, there are at least two ponds that could provide suitable habitat for CTS within 1.30 miles (the maximum distance CTS are known to move away from a breeding pond) of the Phase 3 mining area, but the ponds are located outside of the Sargent Ranch property and were not included in the CTS and CRLF larval surveys conducted on the property in 2000 to 2001, 2004, 2004, and 2017. Thus, known or potential CTS breeding ponds are located within dispersal distance of all four Project phases.

During a CTS and CRLF larval survey conducted in 2000 and 2001, the presence of successful breeding populations of CTS was confirmed in a pond/wetland complex near Tick Creek and within a pond adjacent to Sycamore Creek, a tributary of Tar Creek (both approximately 0.85 mile north of the Project area).

Given the presence of CTS breeding locations well within potential dispersal distance of the Project site, individuals from CTS breeding ponds near the Project site could disperse into the Project area. As a result, the entire Project area could be used by CTS as dispersal and refugial habitat, and it is possible that the species could breed in the stock pond in the Phase 2 geotechnical setback area.

[1] Eastern tiger salamanders (as well as other non-native salamander species) were introduced to California over 50 years ago and have hybridized with native CTS throughout Santa Clara County.

California Red-legged Frog (CRLF)

CRLF inhabit perennial freshwater pools, streams, and ponds. Larvae, juveniles, and adult frogs have been collected from natural lagoons, ponds, pools in or next to streams, marshlands, and springs, as well as human-created stock and sewage treatment ponds, sand and gravel pits (containing water), and large reservoirs. The species requires the presence of perennial or near-perennial water and a general lack of introduced aquatic predators. Non-breeding CRLF are found adjacent to streams and ponds in grasslands and woodlands. They use small mammal burrows in or under vegetation, willow root wads, the undersides of debris within the riparian zone, and large cracks in the bottom of dried ponds as refugia. Movements typically occur along riparian corridors, but some individuals move directly from one site to another through normally inhospitable habitats (e.g., heavily grazed pastures or oak-grassland habitats).

CRLF have been confirmed to be present in ponds and tributaries of the Tick Creek, Tar Creek, Sycamore Creek, Pescadero Creek and Sargent Creek watersheds of the greater Sargent Ranch property during surveys, including four larval surveys conducted on the site from 2000 through 2017 (LOA 2017a, 2017b). The proposed quarry areas themselves provide no suitable breeding habitat for this species; however, a suitable breeding pond is present in the geotechnical setback area for Phase 2, and juvenile CRLF were observed in this pond during a wetland delineation survey in 2017. In addition, Tar Creek and Sargent Creek in locations proposed for access road and conveyor belt crossings, respectively, provide foraging and movement habitat for these species, and all upland habitats of the proposed quarry may also be utilized by this species for dispersal. The locations where CRLF were found are shown on Figure 3.4-4 and detailed survey results are included within Appendices E.3 and E.4.

Foothill Yellow-legged Frog (FYLF)

Foothill yellow-legged frogs inhabit partially shaded shallow streams and riffles with a rocky, usually cobbly, substrate. None of the creeks on or adjacent to the Project site have the cobbly substrate typically present where this species occurs. There are no known occurrences in the Project vicinity (CNDDB 2021), and this species has not been detected on the Project site, or anywhere on the larger Sargent Ranch, during many focused herpetological surveys on the ranch. Therefore, this species is absent from the Project site.

Reptiles

Western Pond Turtle

Within aquatic habitat, pond turtles are associated with areas that contain underwater refugia such as rocks or submerged vegetation. Female pond turtles excavate an upland nest chamber in which the eggs are laid and subsequently buried. Nests are typically found within 600 feet of aquatic habitat, but if no suitable nesting habitat is nearby, adults will travel up to 1,500 feet overland to nest. The only observation of pond turtles on the greater Sargent Ranch property was in a pond along the eastern boundary of the property near U.S. 101, approximately 1,100 feet south of the proposed processing plant. Although there are no known occurrences of western pond turtles within Sargent Creek or Tar Creek, both of these creeks may provide foraging and movement habitat for this species (though occurrence on Sargent Creek is likely limited to lower reaches, downstream from the Project site, due to the brevity of flow in upper reaches closer to the Project site). Neither Sargent Creek nor Tar Creek in the Project vicinity provides large pools with extensive basking habitat, and therefore the species does not occur in large numbers in or near the Project area. It is possible that western pond turtles could also occur in the stock pond in the Phase 2 geotechnical setback area, and a pond along Sargent Creek near the Phase 4 mining area, though the species has not been recorded in these locations during multiple herpetological surveys conducted at Sargent Ranch (LOA 2017a, 2017b), so it does not occur there regularly or in large numbers, if at all. The species could nest in upland areas of the Project site, though occurrence in upland areas for nesting or dispersal between aquatic habitats would be infrequent.

There are two other occurrences recorded in the CNDDB within a three-mile radius, as shown in Figure 3.4-5. The location of the proposed Tar Creek bridge is the primary area on the Project site that supports aquatic habitat for this species, but the species could occasionally occur in the stock pond in the Phase 2 geotechnical setback area and may occur infrequently in other locations during movements between suitable aquatic habitats.

Birds

Bald Eagle

Ideal habitat for bald eagles is composed of remote, forested landscape with old-growth or mature trees and easy access to an extensive and diverse prey base. Bald eagles forage in fresh and salt water where fish are abundant and diverse. They build nests in tall, sturdy trees. Suitable nesting habitat for bald eagles is not present on the Project area. However, this species has been observed roosting on the ranch in the vicinity of Tar Creek and may occasionally forage on the Project area.

Bank Swallow

In California, bank swallows are found primarily in riparian and other lowland habitats in the Central Valley. The species nests colonially and inhabits isolated places where fine-textured or sandy vertical bluffs or riverbanks are available in which to dig burrows 2 to 3 feet deep. Bank swallows forage for insects over open riparian areas, brushland, grassland, and cropland. The bank swallow was documented foraging on the ranch by PNWB biologists, and potential nesting habitat occurs along Sargent Creek in the vicinity of the Project. However, this species is known as a breeder in Santa Clara County and its vicinity only from historical breeding at a nearby location along the Pajaro River. It is not known to have nested in recent decades anywhere in Santa Clara County or elsewhere in the site vicinity, and it therefore occurs on the site only as an occasional nonbreeding visitor.

Least Bell's Vireo

The least Bell's vireo is a riparian-obligate breeder, nesting in dense thickets of willows and other low bushes along perennial or ephemeral streams. The VHP defines nesting habitat for this species as early successional riparian vegetation (typically dominated by willow shrubs and other thick understory vegetation). Although the Project area contains habitat mapped as suitable for the least Bell's vireo by the VHP, the mixed riparian forest and woodland habitat on the Project area lacks the density in the lower strata and the vertical complexity of the riparian vegetation that typifies this species' habitat. Thus, the habitat within the Project area is inconsistent with habitat in which this species has been recorded in northern California. This species has not been observed during surveys on Sargent Ranch, and this species is not expected to occur on the Project site owing to the absence of high-quality habitat and its very sporadic occurrence anywhere in the region.

Tricolored Blackbird

As described in the VHP, suitable tricolored blackbird nesting habitat includes flooded, thorny, or spiny vegetation dominated by cattails or bulrushes, as well as willows, blackberries, thistles, and nettles, usually near extensive open areas such as marshes, grasslands, or agricultural lands that provide foraging habitat. Suitable foraging habitat for the species is present on the Project area. Although the species has not been recorded breeding in the Project area, a stock pond within the geotechnical setback area adjacent to Phase 2 and one small seep that occurs within the setback area of Phase 1 provide suitable nesting habitat. Further, the CNDDB includes a 1989 breeding record for the species on Sargent Ranch. Therefore, the species could breed in the Project area. Nevertheless, this species was not observed on Sargent Ranch during a number of surveys conducted during the period 2000 to 2017, so it does not occur on the site regularly, and it is possible that it no longer breeds there.

White-tailed Kite

White-tailed kites are year-round residents of Santa Clara County, establishing breeding territories that encompass open areas with healthy prey populations (e.g., mice and voles) and snags, shrubs, trees, or other nesting substrates. They typically nest in trees adjacent to extensive open areas, such as grasslands, wetlands, and agricultural areas, that provide their prey. Suitable breeding habitat exists on the site for this species within oak woodland habitat, and grasslands and agricultural areas on the Project area provide suitable foraging habitat.

Peregrine Falcon

Peregrine falcons are widespread throughout California. They typically eat other bird species. Peregrine falcons generally require cliffs for nesting and forage in a variety of habitats. They lay their eggs in “scrapes,” which are shallow indentations they scratch out with their talons in the soft earth on the floor of their nests. No suitable nesting sites are present on the Project area; however, suitable foraging habitat is present, and the species has been observed over Sargent Ranch, so peregrine falcons likely occur as an occasional nonbreeding forager.

Golden Eagle

The golden eagle nests in a range of open habitats, including desert scrub, foothill cismontane woodlands, and annual or perennial grasslands. Nesting habitat is characterized by large, remote patches of grassland or open woodland; a hilly topography that generates lift; an abundance of small mammal prey; and tall structures that serve as nest platforms and hunting perches. Woodlands on the Project area provide marginal nesting habitat for this species, as very large trees suitable for nests are not present near the Project area. No nesting activity has ever been observed on Sargent Ranch despite numerous various biological surveys of the site, many of which occurred during the nesting season. However, golden eagles have been observed foraging over Sargent Ranch and are presumed to forage on the Project area on a regular basis.

Northern Harrier

The northern harrier nests in marshes and grasslands, usually those with tall vegetation and moisture sufficient to inhibit accessibility of nest sites to predators. Individuals forage in a variety of open habitats, especially during the nonbreeding season. The northern harrier has been observed foraging over grasslands on the Project area, and potential nesting habitat occurs adjacent to Sargent Creek.

Short-eared Owl

This species is a year-round resident in certain areas within California, though in Santa Clara County it occurs mainly as a winter resident. The species is found in wide open spaces including marshes, open shrublands, grassland, prairie, and agricultural field habitats, and needs dense ground cover to conceal nests. Breeding is most regular in northeastern California and in the Suisun Marsh area, and irregular elsewhere. Although fluctuating greatly annually, numbers are generally greatest during migration and winter, when birds occur more widely in lowland areas of the state. The Project area supports suitable foraging habitat for this species, but the species has not been observed on Sargent Ranch and does not breed there.

Long-eared Owl

The long-eared owl occurs in the state year-round, although seasonal status varies regionally. The long-eared owl roosts and nests in trees by day and hunts small mammals (such as mice and voles) in open areas by night. The species is found mainly in open woodlands, and riparian areas with adjacent grasslands for foraging. The Project area supports suitable foraging habitat for this species, but the species has not been observed on Sargent Ranch and would not nest in the Project area.

Burrowing Owl

The burrowing owl is a small, terrestrial owl that prefers annual and perennial grasslands, typically with sparse or non-existent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels, using the abandoned burrows of ground squirrels for shelter and nesting. Their breeding season ranges from February 1 and continues through August 31.

A burrowing owl was observed north of the wetland/pond complex near Tick Creek in the northeastern portion of greater Sargent Ranch during 2000 to 2001 surveys; however, the owl was confirmed to be gone from that area by the nesting season. Burrowing owls have been observed during the summer perched on serpentine rock outcrops in the northern portion of Sargent Ranch (well outside of the proposed quarry and processing plant areas), but it is likely the owls were foraging, and not roosting or nesting in this location because rocky outcroppings do not represent suitable nesting habitat. Burrowing owls were observed nesting at Sargent Ranch (outside the Project area) in 2015, and grasslands within the Project area appear to provide suitable breeding habitat for this species; however, burrowing owls are very scarce as a breeder in southern Santa Clara County. Thus, although the possibility that grasslands could provide nesting habitat cannot be eliminated from consideration, this species is most likely to occur in the Project area only as a nonbreeder.

Grasshopper Sparrow

The grasshopper sparrow is a small, inconspicuous sparrow that nests in short (often grazed) to middle-height, moderately open grasslands with few or no shrubs. Tall grassland heavily overgrown with non-natives is not typically used for nesting. The grasslands on the Project area provide suitable nesting and foraging habitat for the grasshopper sparrow, and the species has been observed breeding on the greater Sargent Ranch property.

Bryant's Savannah Sparrow

Bryant's savannah sparrow is one of four subspecies of savannah sparrow that breed in California. The *alaudinus* subspecies occurs primarily in coastal and bayshore areas, from Humboldt Bay to Morro Bay, and is found year-round in low-elevation, tidally influenced habitat, specifically pickleweed-dominated salt marshes, and in grasslands and ruderal areas. Bryant's savannah sparrows breed in Santa Clara County primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat, and in adjacent ruderal habitat, in the South San Francisco Bay area. Breeding also has been confirmed in expanses of short grassland in inland/upland areas on the west side of the Coyote Valley and in the Santa Cruz Mountain foothills, just north of the Pajaro River Valley. During the non-breeding season, *alaudinus* and other savannah sparrow subspecies may forage in open areas throughout the County. Grassland habitats within and adjacent to the Project site provide suitable nesting and foraging habitat for the Bryant's savannah sparrow, although this species breeds there only in low numbers.

Yellow Warbler

The yellow warbler occupies wooded riparian habitats along the coast and prefers riparian corridors with an overstory of mature cottonwoods and sycamores, a midstory of box elder and willow, and a substantial shrub understory. Yellow warblers are uncommon breeders in Santa Clara County, but the species has been recorded breeding in riparian habitat in the southern part of the County along Llagas, Uvas/Carnadero, and Pacheco Creeks, as well as the Pajaro River. Riparian habitats within and adjacent to the Project area provide suitable nesting and foraging habitat for the yellow warbler.

Loggerhead Shrike

Ideal breeding habitat for loggerhead shrikes consists of short grass habitat with many perches, shrubs, or trees for nesting, and sharp branches or barbed wire fences for impaling prey. Small trees and shrubs within the Project area provide suitable nesting habitat for shrikes, and the grassland habitat present on the Project area provides suitable foraging habitat. The site supports both suitable breeding and foraging habitat for the loggerhead shrike.

Mammals

Mountain Lion

Mountain lions occur in a variety of habitat types, including dense forest, more open woodland, and rocky grassland. Though they may forage widely, they typically den in areas providing dense cover, away from human activity. Mountain lions are present in fairly low densities in the Santa Cruz Mountains and the Diablo Range, though they occur widely. This species was observed on Sargent Ranch in 2004 and could occur there regularly. The Project area may be a part of a regular mountain lion territory, and dispersing individuals likely occur within the Project area (e.g., possibly using the U.S. 101 overpass over the railroad tracks and Tar Creek, or the U.S. 101 bridge over the Pajaro River, to disperse across the highway).

Western Red Bat

Western red bats prefer the edges of open foothill woodlands along streams. They roost primarily in trees with moderately dense foliage in a wide variety of habitats. Western red bats prefer open areas for foraging. The species does not breed in the Project region, and the species has not been observed on Sargent Ranch. However, trees on the site provide suitable roosting habitat for nonbreeders, and small numbers may forage over the site.

Pallid Bat

The pallid bat is most commonly found in oak savannah and in open dry habitats with rocky areas, trees, buildings, or bridge structures with cavities for roosting. Roosts generally are high above the ground, warm, and inaccessible to terrestrial predators. Although the species has not been observed on Sargent Ranch, the Project area offers suitable foraging habitat for this species, and roosting habitat may be available in woodlands that support large, cavernous hollows.

California Mastiff Bat

This species resides at low elevations in the coastal basins. California mastiff bats forage over many habitats but require tall cliffs (usually granite or sandstone) with exposed rock faces or buildings for roosting. The species does not breed in the Project region, it has not been observed on Sargent Ranch, and no suitable roosting habitat is present on the Project site. Therefore, the species would not roost on or near the Project site, and it is unlikely to occur in the Project area at all.

Townsend's Big-Eared Bat

Townsend's big-eared bats live in a variety of woodland and forest habitat but prefer conifers. They require caves, mines, tunnels, buildings, or other human-made structures for roosting, may use separate sites for night, day, hibernation, or maternity roosts. Suitable roosting habitat is absent from the Project area, and the species has not been observed on Sargent Ranch. Therefore, the species does not roost in the Project area, and it is unlikely to occur there.

San Francisco Dusky-footed Woodrat

San Francisco dusky-footed woodrats typically live in wooded areas near creeks and streams, where they make large, elaborate nests of twigs and leaves. During a wetland delineation survey, woodrat nests were observed within the Tar Creek riparian corridor near the current at-grade crossing where the free-span bridge is proposed. This species occurs within the Project area in riparian woodland and possibly in oak woodland.

American Badger

In the Project area, American badgers typically occur in annual grasslands, oak woodland savannas, semi-arid shrub/scrublands, and any habitats with friable soils and stable prey populations. Habitat is present on the Project area and this species has been observed during surveys, so this species could forage over much of the site and may den there.

3.4.3.5 Wildlife Corridors and Habitat Connectivity

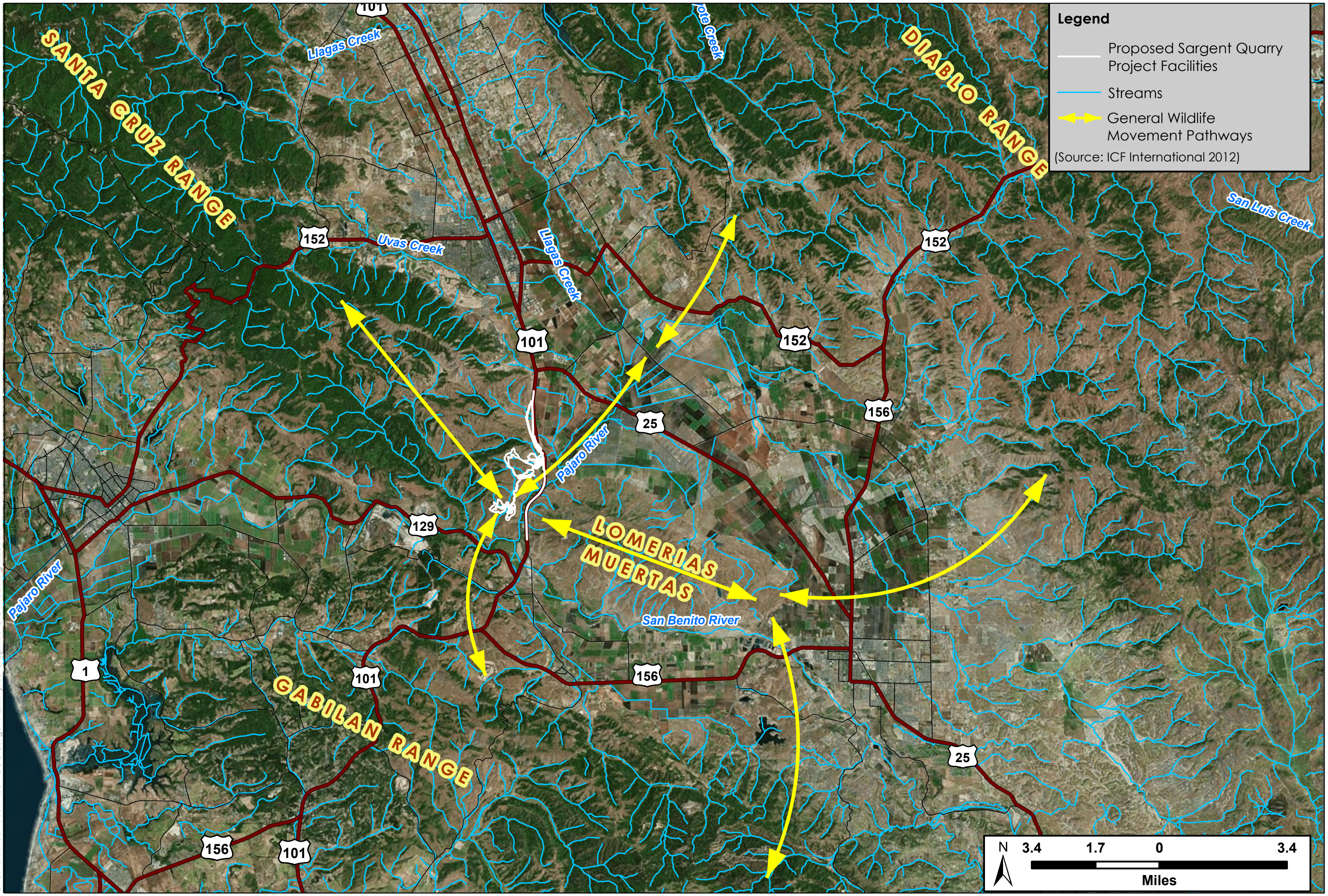
Overview

Habitat connectivity is vital to animals for maintaining connections between core habitat areas (i.e., larger intact habitat areas where species typically reside). Connectivity helps ensure that genetic diversity is maintained by allowing individuals and genes to disperse between populations, thereby diminishing the probability of inbreeding depression, and helps to maintain populations, as individuals from larger or more productive populations can disperse to areas where populations are lower. This helps to ensure that populations are more widely dispersed rather than being confined to fewer, more limited areas where disease, large disturbances such as extensive fires, or random events could cause extirpation (local extinction). Connectivity is especially important in landscapes fragmented by urban development and agricultural activities, such as those in the vicinity of the Project area.

The Santa Cruz Mountains to the northwest, the Gabilan Range to the south, and the Diablo Range across the Santa Clara Valley to the east provide vast areas of natural core habitat that support sizeable populations of common and special-status plant and animal species. Exchange of individuals and genes among populations in these ranges is important to the long-term maintenance of populations and genetic diversity in these ranges and in central California as a whole. Undeveloped habitats in southern Santa Clara County, including the Project area, provide landscape linkages between the Santa Cruz Mountains and Diablo Range, and between these mountain ranges and the Gabilan Range. **Figure 3.4-7** indicates the general linkages/movement pathways that exist between these mountain ranges in the Project vicinity. A number of linkages come together on and near Sargent Ranch, as shown in Figure 3.4-7.

Immediately west of the Project area, the Santa Cruz Mountains narrow from north to south, ending at the Pajaro River Valley and SR 129, where the Gabilan Range begins. The Pajaro River, State Route (SR) 129, U.S. 101, and low-density development represent impediments to wildlife movement between the Santa Cruz Mountains and the Gabilan Range. The ability of animals to move between the Santa Cruz Mountains and the Gabilan Range is dependent upon their ability to navigate these impediments. For example, U.S. 101 represents a substantial impediment to wildlife movement, as studies have found few individual animals crossing U.S. 101 in the Aromas area (Serieys et al. 2021, T. Diamond, pers. Comm.). As a result, areas where animals are able to cross U.S. 101 are critical to the maintenance of connectivity between populations on either side of this highway.

A second important landscape linkage, which is also bisected by U.S. 101, lies between the Santa Cruz Mountains/Gabilan Range and the Diablo Range to the east. The Diablo Range is separated from the Santa Cruz Mountains/Gabilan Range by approximately six (6) miles of valley-floor area dominated by agricultural lands. The riparian habitat along the Pajaro River and its tributaries (i.e., Tar, Carnadero, and Llagas Creeks), and relatively natural habitats (such as fallow fields and ranchlands) along these waterbodies, are important in maintaining this linkage. Aside from Coyote Valley far to the north, the Pajaro River area represents the best opportunity for movement of larger animals, or exchange of genes over generations for smaller species, between the Diablo Range and the Santa Cruz Mountains. U.S. 101 constrains east-west movement between the Pajaro River east of U.S. 101 and areas west of U.S. 101, but there are a number of culverts and other undercrossings that allow animals to move beneath the highway. A smaller-scale and more local, but still important, area of wildlife movement is provided by the proximity of the southern Santa Cruz Mountains and the Lomerias Muertas (the hills east of U.S. 101 between the Pajaro River and San Benito River). These hills provide important secondary linkages between the Santa Cruz Mountains and the Gabilan Range, and between the Gabilan Range and the Diablo Range.



SOURCE: H.T. Harvey & Associates, 2021

SCC Sargent Quarry

Figure 3.4-7
Wildlife Movement Pathways in Project Vicinity

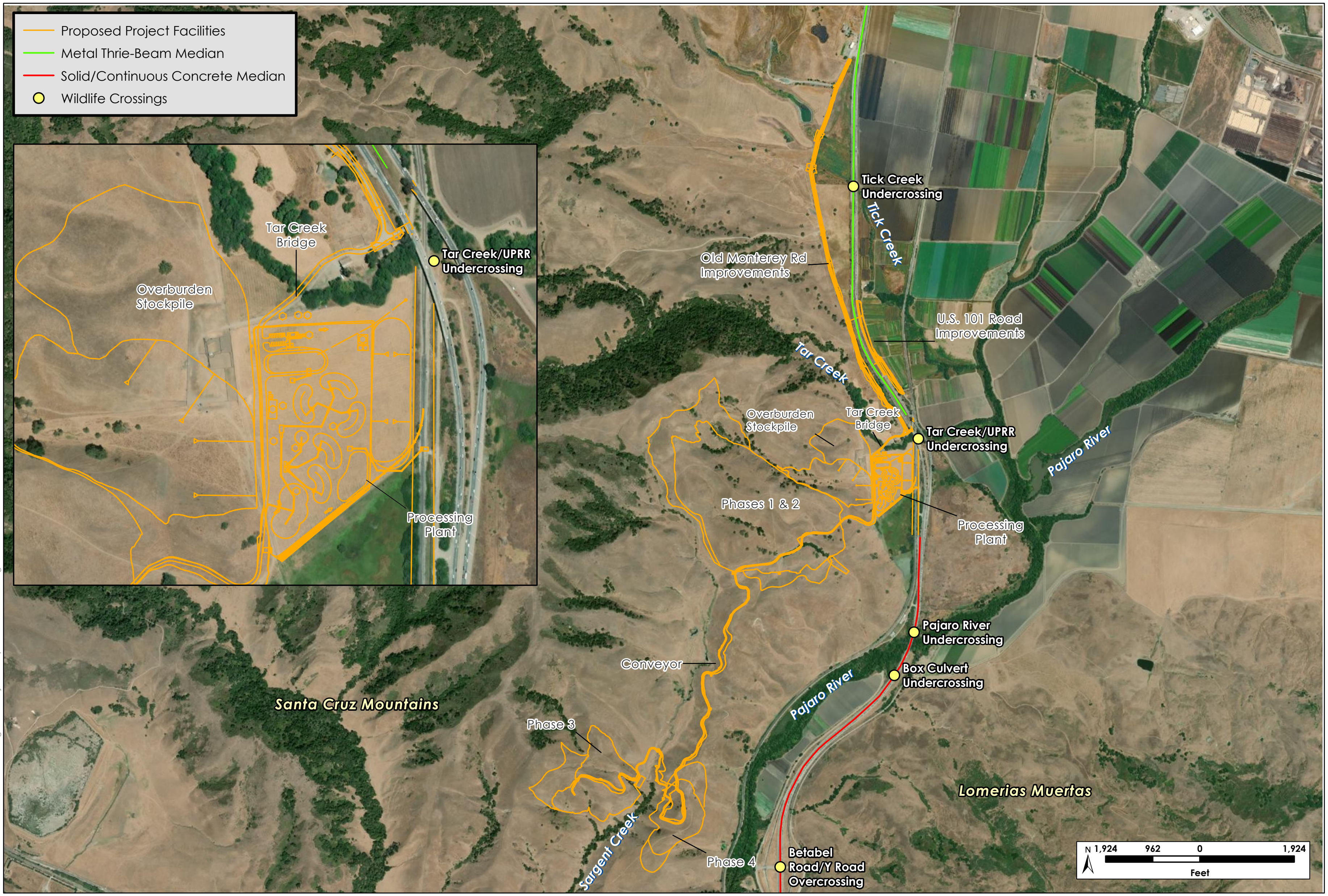
ESA

Individuals of larger, more mobile species such as mountain lion, black-tailed deer, coyote, and bobcat can move among these mountain ranges where they are able to navigate impediments such as U.S. 101. For many of the smaller, less mobile species, such as reptiles, amphibians, and small mammals, single individuals are unlikely to be able to disperse between the mountain ranges due to the long distances separating the range. However, there is sufficient suitable core habitat within the landscape linkages (e.g., along the Pajaro River) for breeding populations to extend from one mountain range to another, allowing exchange of individuals and genes over a series of generations.

U.S. 101 Wildlife Movement Undercrossings

As noted above, the ability of animals to disperse among the Santa Cruz Mountains, the Gabilan Range, and the Diablo Range depends on their ability to cross U.S. 101. Along much of this highway, U.S. 101 is a complete barrier to overland dispersal for most mammals due to the presence of a tall concrete median. Such a median is present from a point between Tar Creek and the Pajaro River (see **Figure 3.4-8** for the location of the northern end of this continuous concrete median barrier) southward through the Aromas area. One study of wildlife movement in the Aromas hills, south of the Project area, found that mortality of bobcats was higher along segments of roads with such high median barriers (Serieys et al. 2021). In a limited section of U.S. 101 from the south end of the Tar Creek/railroad overcrossing north to SR 25 (see Figure 3.4-8), a corrugated steel median feature allows better wildlife passage across the highway's surface. However, vehicle traffic impedes wildlife movement, both by discouraging wildlife from attempting to cross the highway and through vehicular collisions with wildlife. As a result, locations where drainage culverts or bridges are present, and where the undercrossings can be used by animals, are important in allowing animals safe passage under U.S. 101.

Several studies have investigated wildlife movements, including the use of U.S. 101 undercrossings, in the Project vicinity. H. T. Harvey & Associates assessed wildlife movement through the U.S. 101 corridor for the U.S. 101 Improvement Project between Gilroy and State Route 129 (California Department of Transportation 2011, Santa Clara Valley Transportation Authority 2013). To study wildlife use of culverts and bridge undercrossings under U.S. 101, motion-sensor cameras were deployed from February 13 to June 10, 2008. At the Tar Creek/railroad undercrossing beneath U.S. 101, which is directly adjacent to (and just northeast of) the proposed processing plant site, cameras detected 25 mammals at this crossing – 14 bobcats, six coyotes, two mule deer, one raccoon, one striped skunk, and one Audubon's cottontail. These 25 mammals represent ten-and-one-half percent (10.5%) of the crossings detected within the 4.2-mile-long segment of U.S. 101 between Tick Creek and the San Benito River. Other undercrossings within the 4.2-mile-long study area with greater numbers of detections were the bridge over the San Benito River and a 48-inch reinforced concrete pipe (RCP) culvert south of the Betabel/Y Road interchange. **Figure 3.4-8** depicts the U.S. 101 undercrossings closest to the Project site (i.e., at Tick Creek, Tar Creek, the Pajaro River, and a drainage just south of the Pajaro River).



SOURCE: H.T. Harvey & Associates, 2021

SCC Sargent Quarry

Figure 3.4-8
Important U.S. 101 Wildlife Crossings

ESA

In 2012-2013, Pathways for Wildlife (2013) conducted a 12-month study of wildlife movement using motion-sensor cameras to detect mammals at 19 locations in the Pajaro River floodplain and at U.S. 101 crossings of the Pajaro River, San Benito River, Tick Creek, and Tar Creek. The highest numbers of detections were at the Pajaro River/Uvas Creek confluence and the Uvas Creek/Tick Creek confluence, indicating the importance of riparian habitats in the area for wildlife movement. Among U.S. 101 undercrossings, the Tar Creek/railroad undercrossing had the highest number of detections of native mammals (297), with 212 deer, 44 bobcat, 30 coyote, nine raccoon, and two striped skunk detections. Detections of native mammals at other U.S. 101 undercrossings near the proposed Sargent Quarry Project included 136 at the Pajaro River (63 bobcat, three coyote, 15 deer, 53 raccoon, and two striped skunk), 113 at Tick Creek (89 bobcat, two coyote, 21 raccoon, and one striped skunk), and 102 at the San Benito River (43 bobcat and 59 black-tailed deer).

A study by Serieys et al. (2021) of the movement of bobcats wearing GPS telemetry collars in 2017 and 2018 included some animals in the Aromas hills, south of the Project area where the Santa Cruz Mountains-Gabilan Range linkage is located. Most road crossings occurred under bridges or through culverts in topographically low areas (usually along drainages) with tree or shrub cover on both sides of the road, and most crossings occurred at night. Few crossings were attempted in areas without culverts or bridges, and little bobcat movement across U.S. 101 occurred in the Aromas hills area.

A more recent road ecology study performed by the Peninsula Open Space Trust (POST), Pathways for Wildlife, and others used motion-sensor cameras to investigate the use of U.S. 101 undercrossings by wildlife from Carnadero Creek south to the Aromas area from October 1, 2019 through September 30, 2020 (T. Diamond, pers. comm.). Results of that study that are relevant to the Sargent Quarry Project are as follows (T. Diamond, pers. comm.):

- Wildlife use of undercrossings was higher in the vicinity of the Sargent Quarry Project (i.e., at Tick Creek, Tar Creek, the Pajaro River, and the San Benito River) than at U.S. 101 undercrossings farther south in the Aromas area.
- Diversity of animals using undercrossings was highest at the Tar Creek/railroad crossing. Bobcats, coyotes, and black-tailed deer were the most frequently detected mammals, and the Tar Creek undercrossing was likely important both to dispersing animals and resident animals. American badger, gray fox, striped skunk, and raccoon were also detected using this undercrossing. At this location, animals moved along the edge of (outside of) the Tar Creek riparian corridor rather than through the dense vegetation, and they moved over the railroad tracks rather than through the small Tar Creek culvert under the tracks.
- Animal diversity at the Pajaro River undercrossing was slightly lower than at Tar Creek, as American badger and gray fox were not detected under the U.S. 101 bridge over the Pajaro River, although good numbers of coyotes and bobcats used this crossing consistently. The Tick Creek culvert under U.S. 101 supported multiple coyotes, bobcats, raccoons, and striped skunks, though in lower numbers than at Tar Creek and the Pajaro River, and due to the low height of the Tick Creek culvert, no black-tailed deer were recorded using that undercrossing. The San Benito River undercrossing was used by large numbers of black-tailed deer, and mountain lion prints were detected at that undercrossing. Farther north, use of the Gavilan Creek undercrossing (near the SR 25/U.S. 101 interchange) and the Carnadero Creek

undercrossing (where human activity was quite high) was much lower than the culverts from Tick Creek south to the San Benito River.

- Throughout the entire study area, the Tar Creek and Pajaro River undercrossings supported the highest diversity and abundance of mammals.
- Although some animals used undercrossings at night, most detections occurred during the day.

Collectively, these studies have determined that the Tick Creek, Tar Creek, Pajaro River, and San Benito River undercrossings are critical to allowing animals to move back and forth under U.S. 101 along linkages between the Santa Cruz Mountains, Gabilan Range, and Diablo Range. The Tar Creek/railroad undercrossing is one of the most well-used undercrossings for wildlife movement across U.S. 101, due in part to its dimensions. Undercrossings for wildlife are of higher quality if they are more open and have more natural light so that animals do not feel as though they are in a tunnel (FHWA 2011). The Tar Creek/railroad undercrossing is a very broad crossing, in terms of the length of U.S. 101 under which animals can move, being approximately 500 feet wide as measured between the abutments on the narrower (northbound) span. It is also tall, with the spans high above the ground, and short crossing distance from one side to the other, which also makes it well lit. This openness makes the U.S. 101 overcrossing over Tar Creek and the railroad tracks, near the proposed main processing plant, a high-quality crossing. This undercrossing is also valuable for wildlife movement because high-quality cover for dispersing mammals is present on both sides of the crossing.

Existing On-Site Impediments to Wildlife Movement

Existing fencing around the proposed processing plant area currently provides some impediment to wildlife movement (five-strand barbed wire for the existing cattle ranching operation is present along Old Monterey Road, the outer edge of the Tar Creek riparian corridor, the eastern site boundary along the edge of the railroad tracks, and the southern boundary of the processing plant area). West of the proposed processing plant area, cattle herding/separation pens provide a number of fences that animals would need to navigate when moving east-west or west-east through the vicinity of the processing plant. In some areas, such as along the boundary between the site and the railroad tracks, new five-strand barbed wire fencing has been added to older barbed wire fencing so that gaps between strands are particularly narrow. Although animals such as mature mule deer, mountain lions, bobcats, and gray foxes can likely jump or climb over the fencing, and smaller animals can find areas to cross under the fencing, the site does not provide easy, impediment-free movement in its current condition.

An existing residence and small ranching area, including pens for ranching dogs, is present immediately north of Tar Creek and west of U.S. 101, at the south end of Old Monterey Road. Occupancy of this residence and the presence of dogs likely discourages wildlife movement to some extent along the north side of Tar Creek, where there is a narrow, fenced/gated opening between Tar Creek and the northern abutment for southbound U.S. 101.

3.4.4 Impact Evaluation

3.4.4.1 Significance Criteria

Consistent with Appendix G of the CEQA Guidelines, the Project would have a significant impact on 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service;

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.), other jurisdictional waters, and riparian habitat 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;

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan;

The proposed Project is not a covered activity under the VHP and therefore would not conflict with the plan. Therefore, criterion f) is not discussed further under the impact evaluation.

Given the biological sensitivity and importance of the Project area, the following customized specific significance thresholds were used for this EIR. The threshold for significance for special-status plants would be any measurable decrease in special-status plant populations. For endangered or threatened status wildlife, including fully protected species, any loss of individual animals would be a significant impact. For habitat modification, a significant impact is any alteration of the habitat that would result in a drop in the population of special-status species, such as changes in food supply, reduction in elements needed for breeding habitat, or changes that limit opportunities for cover and movement.

The threshold for significance for sensitive natural communities (defined as riparian habitat, wetlands, other jurisdictional waters, and oak woodlands) would be any reduction in the extent of the community compared with baseline, or a change that could threaten the long-term existence of the community itself. The threshold of significance for wetlands and other jurisdictional waters is no-net-loss of extent. The threshold of significance for local ordinances would be conflicts between the project and any such ordinances. Consistent with the Santa Clara County Planning Office Guide to Evaluating Oak Woodlands Impacts, the threshold of significance for impacts to oak woodland is a decrease of 0.50 acre or more in the native oak canopy of an oak woodland.

3.4.4.2 Approach to the Analysis

The following impact analysis evaluates temporary and permanent impacts from construction as well as more permanent effects from operation of the quarry and reclamation following cessation of mining activities. Impacts evaluated include both effects to individuals of a species as well as effects to the species from modification or loss of habitat.

Compensatory Mitigation. To the extent loss of habitat cannot be avoided through Project design or avoidance mitigation measures, compensatory habitat is proposed at an appropriate ratio based on the species affected and, where applicable, the quality of habitat impacted. However, because more than one species may use similar habitat (e.g., aquatic or upland habitat), this compensatory mitigation would benefit multiple species. As Sargent Ranch can likely provide all the replacement habitat necessary to compensate for habitat loss for all species evaluated, on-site mitigation is the preferred approach. Off-site habitat mitigation would only be used in the event that on-site mitigation cannot fully compensate for habitat losses.

3.4.4.3 Project Impacts

Impact 3.4-1: Project activities would result in adverse effects on special-status plant species. (Less than Significant with Mitigation)

The Project area provides suitable habitat for 10 special-status plant species, as shown previously in Table 3.4-2. Although none of these species has been detected in the Project area, no focused surveys for these species have been performed, and given the presence of suitable habitat, these species could be present in the Project area. If present, these species could be impacted by the Project as described below.

Construction

There is the potential for ground-disturbing activities associated with construction of the processing plant, conveyor belt, rail spur, roadway improvements, bridges over Tar Creek and Sargent Creek, and stormwater drainage facilities to damage or destroy special-status plants, if present. Proposed Project activities may affect these plants through direct disturbance of vegetation and disturbance, modification, or destruction of habitat, and may affect them indirectly through damage to underground root structures. Equipment use, vehicle traffic, and worker foot traffic may result in the injury or mortality of individual plants. These activities also could result in altered growth or reduced seed set. Grading may result in the mechanical or physical removal of vegetation and modification of the seed bank. Furthermore, proposed Project activities may include the refueling of equipment on location, and fuel or oil spills may occur during refueling. Dust generated by construction activities could coat vegetative and floral surfaces, interfering with normal gas exchange, photosynthesis, or pollination.

Construction could also result in indirect impacts on special-status plants and their habitats through the introduction and/or spread of invasive plants. If construction vehicles or equipment carries weed seeds or other propagules onto the Project site, new invasive plants could be introduced to the Project site. Many invasive plants thrive following ground disturbance, so grading for construction could result in the spread of invasive species throughout the site. Invasive species introduced onto the site or spread as a result of construction activities could then spread into undisturbed natural habitats, competing with special-status plants and degrading native plant communities.

Similarly, the water mold *Phytophthora* could be introduced to or spread within the Project site. Many species of *Phytophthora* are native to California and do not pose a threat; however, several recently introduced exotic species can have serious effects on native trees, shrubs, and other plants. For example, sudden oak death is caused by a *Phytophthora*. Disease symptoms depend on the species of *Phytophthora* and the host plant but can include stem cankers (necrotic lesions found in the bark), branch dieback, dead leaves, wilting of apical shoots, blight (a water-soaked appearance progressing to brown/black spots and lesions), and root rot. *Phytophthora* infestations can spread to novel areas through the movement of contaminated plant material, roots, or soil, such as through clearing of vegetation, disposal of that vegetation, and relocation of soil between the dam and stockpile areas. In addition, boots, tools, vehicles, and equipment that have moved through contaminated areas can then deposit *Phytophthora* spores or infected debris in uncontaminated areas. The use of water from contaminated watercourses for dust control or other applications can also move spores or infected debris into uncontaminated areas. Spread of contamination could then result in impairment of the health of native vegetation, resulting in declines in abundance of special-status plants and loss or degradation of sensitive native plant communities. Construction impacts would be **significant** because special-status plants would be adversely affected.

Operation

The greatest potential for impacts on special-status plants would occur during mining and stockpiling; if any such species are present within the mining footprint, the geotechnical setbacks (if those areas are impacted), or the permanent overburden stockpile area, those plants would be destroyed when mining of occupied habitat or deposition in the stockpile area occurs. Special-status plants could also be impacted by clearing of fire protection zones. Where roads, the conveyor belt, the rail spur, and the processing plant have been constructed, no direct impacts on special-status plants are likely to occur during operations, as the construction activities will have destroyed any individuals present within the construction footprints.

However, indirect impacts might occur from mining, stockpiling, and use of roads, the conveyor belt, the rail spur, and the processing plant. During refueling of equipment, fuel or oil spills may occur. Dust generated by mining, vehicular activities, use of the conveyor belt, and processing activities could coat vegetative and floral surfaces in nearby areas, interfering with normal gas exchange, photosynthesis, or pollination. Special-status plants and their habitats could also be degraded by the introduction or spread of invasive plants and *Phytophthora* as described for construction activities above. Operations impacts would be **significant** because special-status plants would be adversely affected.

Reclamation

Impacts to special-status plants would be unlikely to occur during reclamation because these activities (e.g., final grading and reseeding, removal of equipment) would take place in already disturbed areas (e.g., mining pits, processing plant) where impacts would already have occurred during construction and operation. Impacts of reclamation on special-status plant species would be **less than significant**.

Summary

No existing laws or regulations apply to impacts to the special-status plant species potentially occurring on the Project site that would reduce impacts (e.g., no permits from regulatory agencies regarding these species would need to be obtained). The degree to which construction or operational activities would affect special-status plants would depend on the number of individuals and/or extent of occupied habitat that is affected. However, because the significance threshold for impacts to special-status plants is "any measurable decrease in special-status plant populations," the loss of any individual special-status plants as a result of Project activities would be a significant impact. The introduction or spread of invasive plants and *Phytophthora* could also cause the loss of individual special-status plants and the long-term degradation of their habitats, which would be a significant impact. Therefore, impacts **would be significant** because special-status plants would be adversely affected.

Mitigation Measure 3.4-1a: The Applicant shall implement the following measures prior to any ground disturbance, vegetation removal, or other activities in natural (i.e., undeveloped) habitat for construction or for the start of mining activities associated with each new mining phase to ensure that impacts to special-status plants as a result of Project activities are avoided or minimized.

1. Preconstruction surveys for special-status plants shall be conducted by a qualified plant ecologist prior to all phases of ground disturbance or construction activity throughout the Project life. A focused survey during the appropriate bloom season for the 10 special-status plant species that could occur shall be conducted in any area of proposed ground disturbance and a surrounding 50-foot buffer area. Surveys must take place no more than four years before ground disturbance in any given area commences. Surveys shall be conducted in a year with near-average or above-average precipitation (i.e., precipitation that is at least 70% of the long-term average for the site, as determined using the 30-year climate normals from the PRISM Climate and Weather System [https://prism.oregonstate.edu] or a similar source). Alternatively, these surveys may be conducted in a year of below-average precipitation if the target species are documented to be flowering/detectable at nearby reference populations despite the below-average rainfall. If surveys are conducted in a below-average rainfall year and detectability of a species at a reference population cannot be confirmed, then no impacts should occur in suitable habitat for that species until a survey can be conducted in an appropriate year (with adequate rainfall or detectability at a reference population). The purpose of the surveys shall be to assess the presence or absence of the potentially occurring species. If none of the target species are found in the impact area or surrounding 50-foot buffer, then no further mitigation measures shall apply. If any individual special-status plants are found in the impact area or 50-foot buffer, then the Applicant shall implement all of the following additional mitigation measures.

   - In consultation with a qualified plant ecologist, the Applicant shall redesign the Project to avoid direct and indirect impacts to the species to the extent feasible (e.g., via the establishment of an appropriately sized buffer of at least 50 feet or larger, as determined by a qualified plant ecologist based on the avoided species and the type of nearby impacts). If all special-status plant occurrences can be avoided via an adequate buffer (as determined by a qualified plant ecologist), then no further mitigation is necessary.

- If a qualified plant ecologist determines that avoidance is not feasible (including determining that the buffers around an occurrence are inadequate to avoid impacts), then the Applicant shall implement the following mitigation measures.
  - Prior to initiation of impacts, a qualified plant ecologist will determine the extent of impacts based on the number of individuals impacted and the acreage of habitat occupied by each special-status plant species, based on the results of the preconstruction survey described above and the impact areas.
  - The Applicant shall provide compensatory mitigation through preservation and management of another, existing on-site or off-site population within Santa Clara County, or in neighboring portions of Santa Cruz, San Benito, or Monterey Counties within 30 miles of the Project area. First priority shall be areas located on Sargent Ranch, if other on-site populations are present. Off-site mitigation shall only be used if on-site mitigation cannot fully compensate for species losses. Habitat occupied by the affected species shall be preserved and managed in perpetuity at a minimum 2:1 mitigation ratio (at least two plants preserved for each plant affected, and also at least two occupied acres preserved for each occupied acre affected), for any impact to Congdon's tarplant. This 2:1 mitigation ratio is not lower because Congdon's tarplant is ranked 1B by the CNPS, and such species have declined significantly over the last century and are considered "rare, threatened, or endangered". However, because no particularly high-quality habitat for Congdon's tarplant is present in the Project area, a 2:1 mitigation ratio is sufficient to offset Project impacts. For the other nine special-status plant species that may be impacted by the Project, habitat occupied by the affected species shall be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acre preserved for each occupied acre affected). This mitigation ratio is not higher than 1:1 because these other nine species have a CRPR of 4; such species are on the CNPS "watch list" because they are of limited distribution, but they are not as scarce or imperiled as CRPR 1B species, and therefore compensatory mitigation at a 1:1 ratio would adequately offset Project impacts to these species.
  - Alternatively, a contribution to the Santa Clara Valley Habitat Agency, in an amount determined in coordination with the agency, for maintenance of special-status plant species populations within the VHP Covered Area may be considered appropriate mitigation for impacts, if approved by the County Department of Planning and Development. This contribution shall be made prior to the initiation of impacts to special-status plants.
  - Areas proposed to be preserved as compensatory mitigation for special-status plant impacts must contain verified extant populations of the CRPR-ranked plants that would be impacted. Mitigation areas shall be managed in perpetuity to encourage persistence and even expansion of the preserved target species. Mitigation lands shall not be located on land that is currently

publicly owned for resource protection unless substantial enhancement of habitat quality (e.g., removal of invasive plants, correction of over-grazing, introduction of appropriate grazing management) shall be achieved by the mitigation activities. The mitigation habitat shall be of equal or greater habitat quality compared to the impacted areas, as determined by a qualified plant ecologist, in terms of soil features, extent of disturbance, vegetation structure, and dominant species composition, and shall contain at least as many individuals of the species as are impacted by Project activities. The permanent protection and management of mitigation lands shall be ensured by the Applicant through an appropriate mechanism, such as a conservation easement to the County or other qualified entity approved by the County, which could be included in the conservation easement referenced in Mitigation Measure M 3.5-4b.

- If Project-specific compensatory mitigation occurs (instead of a contribution to the Santa Clara Valley Habitat Agency), a Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared by a qualified ecologist and implemented by the Applicant for the mitigation lands. The HMMP shall be prepared by a qualified plant or restoration ecologist. The HMMP shall be approved by the County Department of Planning and Development prior to the start of ground-disturbing activities that would impact special-status plants. The HMMP shall include, at a minimum, all of the following information:

  - Summary of impacts on special-status plant species (including individuals and habitat) and the proposed mitigation;
  - Description of the location and boundaries of the mitigation site and description of existing site conditions, including documentation of the occurrence of the special-status plant species for which mitigation is being provided;
  - Description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat) the mitigation site for the focal special-status species;
  - Description of measures to transplant individual plants or seeds from the impact area to the mitigation site, if appropriate (which shall be determined by a qualified plant or restoration ecologist depending on the species and circumstances);
  - Proposed management activities to maintain high-quality habitat conditions for the focal species;
  - Description of habitat and species monitoring measures on the mitigation site, including specific, objective final criteria and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. At a minimum, performance criteria shall include demonstration that any plant population fluctuations over the monitoring period do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be attributed to management (e.g., that are not the result of local

weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management);

- Contingency measures for mitigation elements that do not meet performance criteria; and
- Description of adaptive management[2], indicating how management may be adapted depending on climate change or other changes in site conditions and the process by which adaptive management decisions will be made and implemented.

Mitigation Measure 3.4-1b: To minimize the potential for Project activities to result in the introduction and/or spread of invasive plants and *Phytophthora* (a plant-damaging water mold), the Applicant shall prepare and implement an Invasive Species and *Phytophthora* Management Plan (ISPMP). The ISPMP shall be approved by the County Department of Planning and Development prior to issuance of a grading permit by the County. The ISPMP shall detail the measures to be implemented to minimize the potential for the introduction and spread of invasive plants and *Phytophthora* during Project implementation, including during Project construction, operations, and reclamation. At a minimum, the ISPMP shall include a description of the following information:

1. How materials (including vegetation, soil, and construction materials) and construction personnel, vehicles, and equipment will move around the site and between on-site and off-site areas
2. Measures that will be implemented to minimize the potential for introduction or spread of invasive plants and *Phytophthora* on equipment, tools, vehicles, and personnel, including (but not limited to) the following:
   - Before arrival at the site, equipment, vehicles, and tools will be free of soil including debris on tires, wheel wells, vehicle undercarriages, and other surfaces. A high-pressure washer and/or compressed air may be used to ensure that soil and debris are completely removed.
   - Vehicles may be cleaned at a commercial vehicle or appropriate truck washing facility. Vehicles that only travel and park on paved public roads do not require external cleaning. The interior of vehicles and equipment (cabs, etc.) must be free of mud, soil, gravel, and other debris (vacuumed, swept or washed).
   - Vehicle wash stations may be installed at entrances and exits to the site. All wastewater from those stations should be detained so that it does not enter natural waterbodies or areas of unimpacted vegetation.
   - Small tools and equipment must be washed to be free of soil or other contamination and sanitized. Wood handles on tools should be sealed with a waterproof coating to make them easier to sanitize. Before sanitizing, remove all soil and organic material (roots, sap, etc.) from the surface. If necessary, use a detergent solution and brush to scrub off surface contaminants. The sanitizing agent may also be used as a cleaning fluid. Screwdrivers or similar implements

2 Adaptive management is an iterative process in which practitioners test hypotheses and adjust behavior, decisions, and actions based on experience and actual changes.

may be needed to clean soil out of crevices or shoe treads. Brushes and other implements used to help remove soil need to be cleaned and sanitized after use.

- After surface soil and contamination are removed, treat the surface with a sanitizing agent, allowing the appropriate contact time before use or rinsing. If surfaces are clean and dry, wet surfaces thoroughly and allow for the appropriate contact time. If the sanitizer has been used to help clean the surface, use fresh sanitizer to rinse off any dirty solution and again allow the required contact time. If treated surfaces are wetted with water, the sanitizing solution will become diluted. Apply enough sanitizer to completely displace the water film and then allow the required contact time. Sanitizing agents may be applied by using spray bottles and applied to thoroughly wet the surface. Observe all appropriate safety precautions to prevent contact with eyes or skin when using these agents.
- Sanitizing agents may include 70-90% ethyl or isopropyl alcohol (spray to thoroughly wet the surface and allow to air dry before use); freshly diluted bleach solution (0.525% sodium hypochlorite) for a minimum of 1 minute (due to corrosivity, not advised for steel or other materials damaged by bleach); 2000 ppm quaternary ammonium disinfectant for 1 min (or according to manufacturer recommendations), freshly made or tested to ensure target concentrations.
- Soles and uppers of footwear must be free of debris and soil before arriving at the site. Clean and sanitize footwear as described above.
- Before entering the job site, field workers will receive training that includes information on *Phytophthora* diseases and how to prevent the spread of these and other soil-borne pathogens by following approved phytosanitary procedures.
- Do not bring more vehicles into work sites than absolutely necessary. Within the site, keep vehicles on surfaced or graveled roads whenever possible to minimize soil movement.

3. measures to revegetate temporarily impacted areas using appropriate seed mixes that do not contain invasive species and that are free from *Phytophthora*, shortly following completion of those impacts
4. measures for disposing of cleared vegetation so that *Phytophthora* on plant roots or invasive plant propagules are not spread to uncontaminated areas
5. measures for transporting and stockpiling soil so that *Phytophthora* or invasive plant propagules are not spread from contaminated soil (e.g., in runoff)
6. monitoring to ensure that the ISPMP is properly implemented and that infestations of invasive species or *Phytophthora* are detected before they become widespread or severe
7. methods of addressing any infestations of invasive species, or preventing infestations of *Phytophthora* from spreading
8. the means by which plant materials used in site restoration, during site reclamation, will be ensured to be free of invasive species and *Phytophthora* infestation

Mitigation Measure 3.4-1c: To minimize impacts on special-status plants and animals, and sensitive habitats, the Applicant shall retain a qualified biologist to conduct an employee education training session for employees working on all construction, operations, and reclamation activities, prior to those employees' work on the Project. This training session can consist of in-person training or preparation of a video or similar presentation. Personnel shall be required to attend the presentation, which shall describe any special-status or sensitive species, and sensitive/regulated habitats, that may be present; avoidance, minimization, and conservation measures; legal protection of these animals; the boundaries of Project work areas; and other related issues, including any relevant conditions from resource agency permits obtained for Project implementation. A fact sheet or other supporting materials containing this information shall be prepared and distributed. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-1a would reduce Project impacts on special-status plants to less-than-significant levels through the following means:

- determining whether special-status plants are present in impact areas;
- avoiding or minimizing impacts to special-status plants to the extent feasible; and
- compensating for any impacts that cannot be avoided through the preservation and management of existing populations of the affected species.

Enhancement and management efforts that would be implemented as described in the HMMP prepared for the mitigation effort, if avoidance is not possible, would help maintain, and potentially even increase, populations of the affected species. Implementation of Mitigation Measure 3.4-1b would reduce the potential for special-status plants, and their habitats, that occur near the Project site (i.e., outside of impact areas) to be adversely affected by the introduction and/or spread of invasive species or *Phytophthora*. Mitigation Measure 3.4-1c would help minimize impacts to special-status plants by training staff on these plants and the measures necessary to avoid and minimize impacts. Implementation of the mitigation could also result in impacts to special-status plants; for example, injury or loss of some individuals of the target special-status plant species could occur incidentally (and may not be avoidable) during management activities such as removal of invasive plants or grazing management. However, the overall effects of mitigation would reduce the Project's adverse effects on special-status plant species to a less-than-significant level.

Impact 3.4-2: Project nitrogen emissions would not result in adverse effects on habitat for the Bay checkerspot butterfly and rare serpentine-associated plants located off-site. (Less than Significant)

No serpentine plant communities are present within the Project area (Figure 3.4-6), and none will be directly impacted by the Project. However, the Project could result in indirect impacts on serpentine communities off-site by releasing nitrogen compounds from equipment involved in Project construction and operations. It has been demonstrated that the fertilization of serpentine grasslands with nitrogen allows some non-native grasses, particularly Italian ryegrass, to be more competitive and become dominant, typically at the expense of native plants (Huenneke et al.

1990). Weiss (1999) described how moderate, well-managed grazing is necessary to prevent large-scale invasion of serpentine grassland by non-native grasses. In the absence of grazing, Bay checkerspot butterflies disappeared from ungrazed areas due to declines in densities of their larval host plants. Weiss (1999) further provided evidence that dry nitrogen deposition resulting from smog facilitates the invasion of serpentine grassland by non-native plants. As a result, the Santa Clara VHP (VHP) concluded that increases in nitrogen emissions from increased traffic associated with development projects in the South Bay could adversely affect serpentine plant and animal communities. Impacts of Project construction and operational activities are described below.

Construction

As indicated in Section 3.3, construction activities would release up to 1.94 tons per year or 24.8 pounds/day of nitrogen oxides. Serpentine communities supporting the Bay checkerspot and special-status plants are located north/northwest of the Project site, primarily on both sides of the Santa Clara Valley from the San Martin area northwest into San Jose. As a result, for nitrogen emitted from the Project to be deposited on serpentine communities supporting those rare species, winds would need to be generally from the south or southwest to carry nitrogen from the Project site to those sensitive habitat areas. Winds are from the south/southeast at times, and therefore some of the nitrogen emitted by Project construction activities may be deposited on serpentine communities to the northwest of the site. However, winds in the Project site vicinity are primarily from the west and north. Winds in the Gilroy area are "most often from the west for 8.8 months, from February 14 to November 8" and "most often from the north for 3.2 months, from November 8 to February 14" (WeatherSpark 2021). Therefore, most of the nitrogen emitted during construction activities would be carried in directions that would not result in deposition on suitable habitat (including designated critical habitat) for the Bay checkerspot butterfly or special-status serpentine plants. The impact of Project construction on habitat for the Bay checkerspot butterfly and rare serpentine-associated plants due to nitrogen emissions would be **less than significant**.

Operation

The Project would result in nitrogen emissions from vehicles and equipment during quarry operations. As indicated in Section 3.3, vehicles accessing the site for quarrying operations, equipment performing quarry operations, and locomotives and trucks carrying quarried materials to users would release approximately 82.8 lbs/day on average and 12.8 tons/year of nitrogen for operation. As described for construction impacts above, prevailing winds in the Gilroy area would carry most nitrogen emitted at the Project site itself in directions that would not result in nitrogen deposition impacts on serpentine communities and species in the Santa Clara Valley. Vehicles and locomotives traveling to the site from points closer to these serpentine communities are more likely to emit nitrogen that would be deposited in areas where serpentine impacts may occur, and some of the nitrogen emitted from vehicles, equipment, and locomotives on the site would be carried north/northwest toward, and may be deposited on, those serpentine communities. However, these emissions would be low in concentration and dissipated to the point of not causing impacts on serpentine communities due to the typical direction of prevailing winds in the area. Therefore, the impact of Project operations on habitat for the Bay checkerspot butterfly and rare serpentine-associated plants due to nitrogen emissions would be **less than significant**.

Reclamation

As discussed under operational impacts, nitrogen emissions from vehicles and equipment could occur during reclamation activities. As described for construction impacts above, prevailing winds in the Gilroy area would carry most nitrogen emitted at the Project site itself in directions that would not result in nitrogen deposition impacts on serpentine communities and species in the Santa Clara Valley. Deposition of nitrogen on serpentine communities would occur from vehicles used in reclamation traveling to and from the site. However, these emissions would be low in concentration and dissipated to the point of not causing impacts on serpentine communities. Therefore, the impact of Project reclamation on habitat for the Bay checkerspot butterfly and rare serpentine-associated plants due to nitrogen emissions would be **less than significant**.

Summary

Nitrogen emissions from the Project would not result in any substantive impacts on serpentine communities near the Project site. The nitrogen emissions would not facilitate growth of non-native grasses that could compete with special-status serpentine plants and with Bay checkerspot host plants for the following reasons:

- nitrogen emitted during the Project's construction activities is less than BAAQMD thresholds;
- the directionality of the prevailing winds (which would carry most emissions away from serpentine communities supporting the Bay checkerspot butterfly and special-status plants);
- the dissipation of that nitrogen as it is carried from the Project site to distant serpentine communities (nitrogen oxide concentrations are highest closest to the source and then quickly dissipate[3]; and
- the relatively low concentrations of nitrogen deposition that will occur in any given area of serpentine habitat.

The significance threshold for habitat modification impacts is "any measurable alteration of the habitat that would result in a drop in the population of special-status species", and a measurable alteration of habitat that would result in a decrease in populations of special-status, serpentine-associated species would not be caused by the Project. Therefore, impacts of the construction, operations, and reclamation phases of the Project on the Bay checkerspot butterfly and other serpentine-associated species and communities would be **less than significant**.

Mitigation: None required.

Significance: Less than significant.

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3 https://www.bbc.com/future/article/20191113-the-toxic-killers-in-our-air-too-small-to-see

Impact 3.4-3: Project activities would result in adverse effects on special-status fish and their habitat. (Less than Significant with Mitigation)

The federally threatened South-Central California Coast steelhead, as well as two California fish species of special concern (Monterey roach and Monterey hitch), likely occur in the on-site reach of Tar Creek that will be traversed by a new clear-span bridge. Monterey roach and Monterey hitch could also occur in the lower reaches of Sargent Creek (downstream from the Project area) when that stream contains water, and all three species occur in the Pajaro River downstream from the Project site.

Construction

Tar Creek Bridge

While steelhead migrate through the reach of Tar Creek where the free-span bridge crossing is proposed, this area and immediately adjacent upstream and downstream reaches do not provide spawning habitat for this species due to a lack of gravelly substrate. This reach of the creek is also unlikely to be used by rearing juveniles due to the relatively high temperatures of this valley-floor reach. Therefore, steelhead use this reach only during migration. In contrast, the Monterey roach and Monterey hitch are smaller fish that are more tolerant of high-water temperature and low water quality, so these fish could occur in the reach of Tar Creek where the bridge is proposed year-round.

The Tar Creek bridge is proposed as a free-span structure that would span the aquatic habitat of the creek, maintaining a natural creek bottom, and footings would be placed outside the wetted channel and bank area. The bridge, as proposed, would not result in direct loss of habitat for special-status fish or impede their current use of the creek. Currently, there is an at-grade crossing at this location, with related erosion and sedimentation due to vehicles travelling through the wetted channel. The free-span bridge would result in an improved condition as compared to vehicles crossing directly through the creek.

Sargent Creek Bridge

A crossing of Sargent Creek is also proposed. This crossing would consist of an arch culvert crossing that, like the Tar Creek bridge, would span the creek bed, leaving the channel bottom undisturbed and able to convey flows in a natural manner. Although steelhead are not present in Sargent Creek, and Monterey roach and Monterey hitch would not occur in the creek as far upstream as the bridge location, these latter two species could be present in Sargent Creek downstream from the proposed bridge.

During construction of these bridges, adverse impacts on fish and their habitat (including designated critical habitat for steelhead within Tar Creek) could occur. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill or injure individuals, in the absence of water-quality protection measures. Grading may mobilize soils into the creek, and bare soils following completion of grading may leave soils susceptible to erosion and sedimentation. Sedimentation of the stream could degrade habitat for invertebrates on which steelhead prey, and increased turbidity could make it more difficult for fish to see their prey. However, construction of the bridges would occur during the dry season, from approximately April 16 through October 14. Steelhead are unlikely to be present on the Project site during those months due to high stream temperatures and this species' distribution (with juveniles rearing higher in the watershed), thereby minimizing the likelihood that steelhead would be present in or downstream from the impact area when these impacts occur. Monterey roach and Monterey hitch could be present in or downstream from the Project footprint at the time construction occurs, but these species are much more tolerant of low-quality habitats and lower water quality than steelhead, and sedimentation would likely have less effect on these species than on steelhead.

Other Construction

The impacts on water quality and instream habitat could also occur as a result of construction of access roads, the conveyor belt, and the processing plant. Although those Project components are not located in streams, construction of the access road between Phase 3 and Phase 4 mining areas will occur on both sides of the proposed bridge over Sargent Creek. Mobilization of sediments during grading, and mobilization of sediments and pollutants (e.g., leaked from equipment) in runoff from areas under construction, could adversely affect water quality in Sargent Creek, and therefore fish habitat downstream from the Project site.

Avoidance Requirements

Water quality impacts on special-status fish would be reduced by implementation of the conditions of permits necessary to construct the bridges and to impact wetland, creek, and riparian habitats during mining activities. These activities would necessitate permits from the USACE under Section 404 of the CWA, the RWQCB under Section 401 of the CWA and/or the Porter-Cologne Water Quality Control Act, and the CDFW under Section 1600 of the California Fish and Game Code. These permits would include conditions requiring the implementation of measures to avoid and minimize impacts to water quality and to aquatic species such as fish. Implementation of the conditions in these permits would reduce impacts on special-status fish and their habitats considerably. To further address the potential for hazardous materials to enter these creeks during Project construction and operations, the Project would implement a Spill Prevention, Control, and Countermeasure Plan (SPCCP) as required by the State Water Resources Control Board and a Hazardous Materials Business Plan (HMBP) so that any spills or leaks would be controlled before they could enter waterways containing sensitive species. Nevertheless, because resource agency permits have not been issued and the conditions of those permits are not yet known with certainty, the impact of construction activities on special-status fish and their habitat would be **significant**.

Operation

Water Quality Impacts

Trucks using the bridges over Tar Creek and Sargent Creek during Project operations would not result in adverse effects on special-status fish, as both bridges would completely span their respective creeks, and any water-quality impacts from runoff from the bridges into these streams would be minor due to the very limited surface area of these bridges. In addition, the trucks would not be traveling off-road surfaces; therefore, they would not track debris that could fall onto the surfaces of the bridges. However, refueling of equipment or accidental spills (e.g., from equipment malfunctions) could result in chemicals or fluids to be washed into streams supporting special-status fish.

Project facilities (i.e., processing plant, screening berm, and mining pits) are located at least 150 feet from Tar Creek. At this distance, direct impacts on steelhead, Monterey roach, Monterey hitch, or their habitat (including steelhead critical habitat) would not occur. Settling ponds would collect stormwater and ultimately percolate it into the ground, preventing sediment or pollutants in stormwater from entering waterways containing special-status fish. Swales would buffer overburden stockpiles and the processing plant area from Tar Creek to the west and prevent stormwater from the Project area from entering the creek. Stormwater management is described in greater detail below.

There is some potential for chemicals or fluids associated with use of the rail cars to be washed into habitats for sensitive species adjacent to the spur or rail line; however, this type of chemical release would be unlikely given that the rail cars would not be fueled or maintained while picking up loads at Sargent Quarry. UPRR and its contractors are required to implement specific Safety Rules that include spill control measures in the event that an incident occurs (UPRR 2019a, 2019b). These Safety Rules would ensure that impacts to water quality and aquatic species are minimized by ensuring a quick response to any spill.

Stormwater Management in Quarry Areas

Based on the November 3, 2016 Todd Groundwater memo (Todd Groundwater 2016) and July 29, 2019 addendum (Todd Groundwater 2019) (see Appendix I.2), as well as information on reclamation of the mining areas, several changes in groundwater and surface hydrology may occur during Project operations. All four mining pits would intercept groundwater and surface runoff that otherwise would have flowed on or below the surface of the area to be occupied by the pits. During mining, that water would concentrate in pools/ponds within each pit (with separate pools in Pit 3, Pit 4, and Pits 1 and 2 combined). The water that concentrates in the pits would otherwise have continued downslope to contribute hydrology to creeks such as Tar Creek and Sargent Creek. During mining within a given pit, either in-water mining will take place, or if water needs to be pumped out of active mining areas, this water will be pumped to an adjacent stormwater retention basin within the pit area, where it would be allowed to percolate into the ground from the basin. Some of the water that has collected in the pits during mining operations would also percolate to groundwater, as there would be no impervious surfaces. This groundwater infiltration would continue to contribute hydrology to creeks or riparian habitats downgradient of the pits.

Changes in In-Stream Flow

As discussed in Impact 3.10-5 in Section 3.10, *Hydrology and Water Quality*, onsite consumptive use of water (primarily from pumped groundwater from a well near the Pajaro River in the northwest corner of the processing plant area shown on Figure 2-5a) could reduce the amount of water in the Pajaro River. A substantial reduction in flow in the Pajaro River could affect the ability of steelhead to pass up and down the river, particularly during the primary migration months (December-April). Monterey roach and Monterey hitch are smaller than steelhead and are less likely to be affected by reductions in Pajaro River flows. The consumptive use of water on the site is estimated to equal at most seven-one-hundredths-of-a-percent (0.07%) of average monthly flows during the period December-April (Todd Groundwater, see Appendix I.2). During the driest year evaluated by Todd Groundwater, the onsite water use equaled up to six percent (6%) of flow in December, January, and February. However, the groundwater that would be used by the Project would come from a deep well that would have little effect on groundwater that supports flow in the Pajaro River. This would further reduce any changes in river flow. Similarly, the amount of runoff that would be intercepted by the mining pits represents a very small proportion of the watershed of the Pajaro River, and much of the water in the mining pits would infiltrate through the pools that form in the mining pits or through the retention basins that will be constructed in those pits, thereby continuing to move down-gradient into groundwater. Therefore, water use by the Project or interception of groundwater or surface flow (e.g., sheet flow or intermittent tributaries, such as Sargent Creek) would not result in a reduction in flow in the Pajaro River sufficient to affect steelhead passage, or result in any other significant impacts on aquatic habitats or species associated with the Pajaro River.

Similarly, no substantial changes in streamflow within Tar Creek would result from Project operations. As indicated by the topography and streams illustrated on Figure 4 of LOA (2017a), very little of the area that would be occupied by the Phases 1 and 2 mining pits, and none of the Phases 3 and 4 mining areas, flows toward Tar Creek. Therefore, interception of surface flow and ephemeral streamflow by mining would have a negligible effect on Tar Creek flows.

However, the Project could have a greater impact on flows in Sargent Creek. Groundwater (primarily in the case of Pit 3) and surface runoff (in both Pits 3 and 4) that currently flows through the Phase 3 and Phase 4 areas to Sargent Creek would be intercepted by the mining pit in each phase and would collect in pools within the pits. The bottoms of both pits would be at elevations approximately 15 feet higher than the bed of Sargent Creek where it passes these pits. As a result, infiltration from the bottom of these pits (either in the pool that forms in the low area of each pit or in a separate stormwater retention basin within each pit) might still provide some groundwater flow to Sargent Creek.

Collectively, Phases 3 and 4 would include approximately 209 acres of watershed, including the acreage of the pits and their contributing watersheds, that would be intercepted, representing approximately thirty percent (30%) of the 700-acre Sargent Creek watershed upstream from these two phases. According to Todd Groundwater's memo, Pit 3 will intercept groundwater recharge from an area of 177 acres, while Pit 4 likely does not provide substantial groundwater to Sargent Creek because of its small tributary watershed, with little upslope area generating groundwater recharge and surface runoff. Hydrologic assessment indicates an intercepted groundwater-to-surface water ratio of about 1:1 in Pit 3 (meaning that roughly half the water intercepted will be groundwater and half will be surface water), and that the hydrologic contribution of the Pit 4 area to Sargent Creek is approximately eleven percent (11%) of that of the Pit 3 area. Therefore, the total reduction in hydrologic input to the reach of Sargent Creek downstream of Phases 3 and 4 could be less than the thirty percent (30%) figure calculated from a straight estimate of the percentage of impacted watershed. In addition, Pits 3 and 4 would not be mined concurrently. Although there may be some overlap between mining in Pit 4 and reclamation in Pit 3, the full impact of hydrologic alteration from mining in each phase would not be exerted simultaneously.

Nevertheless, a reduction in inflow to Sargent Creek could result in a decline in the extent and quality of habitat for Monterey roach and Monterey hitch in the lower reaches of Sargent Creek (downstream from the Project area) for the approximately six years in which both of these pits would be in operation. Because Sargent Creek is intermittent, the extent of suitable habitat for these species within the creek likely varies naturally from year to year depending on precipitation levels, with these species moving from the Pajaro River into lower Sargent Creek and moving upstream along Sargent Creek as far as suitable habitat is present and accessible. As a result, if the extent of suitable aquatic habitat, and the duration in which such habitat is present, are reduced in lower Sargent Creek during the 10 to 15 years of mining in Pit 3 and then in Pit 4 Monterey roach and Monterey hitch would simply occupy less of Sargent Creek, and confine their activities more to the Pajaro River, during that mining period. Given the limited extent of Sargent Creek that is suitable for these species even under baseline conditions (due to intermittent flow), and the very limited proportion of the Pajaro River watershed represented by lower Sargent Creek, the 20- to 30-year reduction in Sargent Creek flows would not result in a substantial loss of habitat for Monterey roach and Monterey hitch and would not result in the loss of individuals of these species.

To summarize, the impacts of Project operations on special-status fish and their habitat would be **less than significant**.

Reclamation

For the reasons discussed under Operations, water quality impacts are unlikely to occur as a result of reclamation activities. However, there is some potential for chemicals to enter streams as a result of spills or equipment malfunctions during reclamation. In-stream flow would be returned to baseline conditions. All pits would be graded so that non-draining depressions (e.g., ponds or pools) are not present; rather, the floors of the reclaimed pits will slope at a gradient of at least one-percent (1%) toward graded swales. The swales in Pits 3 and 4 would carry water toward Sargent Creek, so that after reclamation, Sargent Creek would receive approximately the same input of surface water (and likely the same input of groundwater) as it did prior to Project activities. After reclamation, Pits 1 and 2 would have gradual slopes, with the western portion sloping toward a retention basin in the central part of the pit and the eastern portion sloping toward a second retention basin, which would flow into the existing ephemeral stream. Due to the potential for chemicals to enter streams during reclamation activities, the impact of Project reclamation on special-status fish and their habitat would be **significant**.

Summary

Although no individual steelhead would be directly lost as a result of the Project, habitat modification resulting from inadvertent mobilization of sediment or chemicals released into waters supporting steelhead, Monterey roach, or Monterey hitch would result in a reduction in the populations of one or more of these species. Therefore, the impact of Project construction on special-status fish would be **significant**.

Mitigation Measure 3.4-3: The Applicant shall implement the following measures and the "Aquatic Avoidance and Minimization Measures" contained in Table 6-2 of the VHP, during any Project construction activity, and during operational and reclamation activities as appropriate (e.g., equipment storage or refueling, or other activities that could result in spills) to minimize increases of peak discharge of stormwater and to reduce runoff of sediment and pollutants to protect water quality. The following measures to be implemented by the Applicant shall be monitored by the qualified biologist retained by the Applicant as described in Mitigation Measure 3.4-5, who shall be present to monitor construction activities during initial ground disturbance or vegetation clearing in any given area or Project phase.

a. No construction within creeks or riparian habitats shall occur during the wet season (October 15 to April 15, or as otherwise indicated by the conditions of resource agency permits).

b. Ground disturbance shall be minimized so that only those phases of the Project and ancillary supporting facilities, including but not limited to road construction, conveyor installation and operation, and plant and rail construction, which are actively being constructed or being mined would be cleared/prepared.

c. The removal of riparian vegetation shall be minimized to the amount necessary to accomplish the required activity and comply with public health and safety directives. Any riparian vegetation to be removed shall be clearly identified on plans submitted to and approved by the County Department of Planning and Development prior to any riparian vegetation removal, along with evidence establishing why removal of such vegetation is necessary.

d. Erosion control plans shall be submitted to and approved by the County Department of Planning and Development prior to initiation of ground disturbance and shall include the following:

    - Control exposed soil by stabilizing slopes (e.g., with erosion control blankets) and protecting channels (e.g., using silt fences or straw wattles). Appropriate erosion control measures (e.g., fiber rolls, filter fences, vegetative buffer strips) shall be used on-site adjacent to creeks or riparian vegetation. Fiber rolls used for erosion control shall be certified as free of noxious weed seed.

    - Stockpiled soil shall be stabilized with geotextile or plastic covers. Sediments shall be stored and transported in a manner that minimizes water quality impacts. If soil is stockpiled, no runoff shall be allowed to flow back to the channel.

e. If high levels of groundwater in a work area are encountered and dewatering must occur, the water shall be directed into infiltration basins, holding ponds, or areas with vegetation to remove sediment prior to the water re-entering a creek.

f. Construction and mining waste shall be disposed of in designated areas and stormwater shall be prevented from flowing onto or off of these areas.

g. Personnel shall use the appropriate equipment for the job that minimizes disturbance to the stream bottom. Appropriately tired vehicles, either tracked or wheeled, shall be used depending on the situation.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-3 would reduce potential impacts to steelhead (including critical habitat for the species), Monterey roach, and Monterey hitch to a less-than-significant level by minimizing impacts of construction and operation on water quality. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on fish and their habitats by training Project personnel on these species, their habitats, and measures necessary to avoid and minimize impacts. As a result, no individuals would be lost as a result of water-quality impacts, and these species' habitat would not be lost or degraded to the point of resulting in declines in these species' populations.

Impact 3.4-4: Project activities would result in adverse effects on California red-legged frogs (CRLF) and their habitat. (Less than Significant with Mitigation)

The presence of CRLF has been confirmed throughout the greater Sargent Ranch property. While the proposed quarry areas do not provide suitable breeding habitat for the CRLF, breeding has been observed in the geotechnical setback area for Phase 2. Tar Creek and Sargent Creek provide foraging and movement habitat for these species, and all upland habitats (e.g., where access roads or the processing plant would be constructed) in the Project area may also be utilized by this species for dispersal.

Construction

Proposed construction activities could result in the injury or mortality of individual CRLF. Although no breeding habitat would be impacted during construction, small numbers of adult or juvenile CRLF could be present along Tar Creek and Sargent Creek where crossings would be constructed. Further individuals could be present in upland areas where grading would occur. Construction activities might result in the injury or mortality of individuals as a result of worker foot traffic, equipment use, or vehicle traffic. Substrate vibrations may cause individuals to move out of refugia (e.g., small mammal burrows), exposing them to a greater risk of predation or desiccation. In addition, CRLF may be crushed, trapped, or suffocated, in refugia by the passage of heavy equipment. Grading and other construction activities could impede movements by CRLF by altering topography or placing stockpiles of materials along movement pathways.

Construction of roads, structures, and related facilities will occur over a 9-month period, and therefore will overlap the wet season when the majority of CRLF activity in upland areas (i.e., away from wetland and aquatic habitats) occurs. However, the majority of initial grading for any of the Project phases, and the processing plant area, would occur primarily during the dry season. The likelihood that CRLF would be present in upland areas during dry-season construction is limited because this species moves across upland areas more often during the wet season. Individuals could still move through upland areas or use refugia such as small mammal burrows in upland areas during the dry season.

Indirect impacts to CRLF and their habitat could also result from impacts to water quality in the ways described in Section 3.4-3 above. Water-quality impacts could include reduction in the suitability of aquatic foraging habitat, which could reduce prey abundance, and pollutants could affect the health of both CRLF and their prey. Increases in human concentration and activity in the vicinity of suitable habitat may result in an increase in native and non-native predators that would be attracted to trash left at the work site and that would prey opportunistically on CRLF. Movement of Project personnel and equipment within the site, and between on-site and off-site areas, could also spread pathogens such as chytrid fungus, which can impair the health of amphibians such as CRLF.

Construction of the bridges across Tar Creek and Sargent Creek would not result in the loss of aquatic habitat. The bridge proposed over Tar Creek is a free span bridge and Sargent Creek bridge would be an arched culvert, both of which would span the creek bed, leaving the channel bottom undisturbed. However, construction of these bridges would result in the direct loss of suitable riparian and upland dispersal habitat for CRLF.

Impacts on CRLF would be reduced by implementation of the conditions of permits and approvals. For example, conditions of the permits necessary to construct the bridges and to impact wetland, creek, and riparian habitats during mining activities (from the USACE under Section 404 of the CWA, the RWQCB under Section 401 of the CWA and/or the Porter-Cologne Water Quality Control Act, and the CDFW under Section 1600 of the California Fish and Game Code) would include conditions requiring the implementation of measures to avoid and minimize impacts to water quality and to aquatic and amphibious species such as CRLF. Implementation of the conditions in these permits would reduce impacts on CRLF and their aquatic habitats. Even more relevant to CRLF, the Project may obtain a FESA incidental take approval from the USFWS, either through Section 7 consultation (e.g., through USACE permitting) or via Project-specific FESA Section 10 incidental take permit. This FESA incidental take approval would address the effects of both construction and operational activities. USFWS incidental take approval would include conditions to reduce and compensate for impacts to CRLF. Nevertheless, because resource agency permits and approvals have not yet been issued and the conditions of those permits are not yet known with certainty, Project construction could result in significant impacts on CRLF. The impact of Project construction on CRLF would be **significant**.

Operation

Mining Pits

Project operation would also result in the loss of upland dispersal habitat of CRLF, within the footprints of the mining pits and any portions of the geotechnical setback areas and overburden stockpile areas that need to be disturbed, during the period in which mining occurs. A pond in the geotechnical setback area for Phase 2 is known to have been used for breeding by this species. It is unknown whether this pond would be disturbed during operations, given that portions of the geotechnical setbacks may only be excavated in the event of slope failure. However, because this pond is located very close to the proposed Phase 2 mining boundary, the risk that it may be lost is considerable. Loss of this pond could result in impacts to CRLF eggs and/or larvae, if present when the pond is disturbed, and impacts to this pond would represent a loss of breeding habitat. Similarly, mining at Phase 4 would reduce the area draining to a pond between the Phase 4 mining area and Sargent Creek where LOA detected CRLF (2017b). Although the pond would not be physically impacted, as it is outside of the proposed mining area, diversion of some of this pond’s watershed via mining could cause it to be effectively lost as a suitable breeding pond.

During mining operations, individual CRLF could be adversely affected in the same ways described above for construction activities. For example, individuals could be injured or killed by foot traffic, equipment, and vehicles, both during new groundbreaking in mining pits, during mining activities, and during movement of people around the site. As described for construction activities above, degradation of water quality could occur during Project operations; CRLF could be affected by greater concentrations of predators attracted to human food waste; and Project personnel and equipment could introduce or spread amphibian diseases such as chytrid fungus. Operational activities such as pit excavation could impede movements by CRLF by altering topography or placing stockpiles of materials along movement pathways, though there are no areas where CRLF would be completely unable to move through or around such obstacles.

Because CRLF are often active (especially when moving through upland areas) at night, nighttime operational activities could harm this species by increasing the potential for personnel or vehicles to injure or kill individuals (e.g. on roadways), and nighttime lighting could make it easier for predators to detect and capture CRLF. Mining would occur during the day, and therefore no lighting would be installed in the quarry pit areas or along the conveyor belt. Lighting would be installed at the processing plant in accordance with Mine Safety and Health Administration (MSHA) regulations and County Guidelines for Architecture and Site Approval (30 CFR Parts 1-199; Santa Clara County, 2020). Lights at the processing plant may be on in the early morning and later afternoon hours (i.e., when the plant opens at 4:30 a.m. and prior to closing at 5:00 p.m.) during the winter months. Lighting would be shielded to prevent light overspill onto neighboring properties and reduce impacts on nighttime views from U.S. 101. Tall fixtures that illuminate large areas would be avoided. Festooned, naked-bulb, or flashing bulb lighting would not be allowed per County Architecture and Site Approval (ASA) guidelines. While these aspects of the lighting plan would reduce impacts resulting from lighting, it is still possible that lighting between 4:30 a.m. and dawn could increase the risk of predation on CRLF.

During mining, CRLF could occupy any ponds and pools that form in the mining pits, or retention basins that are constructed in the pits. Although mining activities would inhibit growth of emergent and riparian vegetation that may serve as high-quality CRLF cover and egg mass attachment sites, vegetation could grow in these pools if there is a lull in mining or in disturbance of those pools. Mining could injure or kill frogs that colonize the pools. If CRLF were to lay eggs in those pools, then mining activities could destroy the egg masses, and any artificial drawdown of the pools (e.g., by pumping of water into retention basins) could strand, or cause the desiccation of, eggs or larvae. Mining could therefore impact all life stages of the species within pools that form, or are constructed, in the pits. If enough CRLF were attracted to these pools, then affected as described above, these pools could serve as population sinks, resulting in a long-term decline in local CRLF populations. Ongoing mining activity in any given pool would result in disturbance that would discourage large numbers of frogs from remaining in or breeding in that pool, but a lull in such disturbance could cause larger numbers of individuals to concentrate in the pool, and possibly to breed there.

Processing Plant

The processing plant would include a 0.52-acre storage pond. CRLF could be attracted to this pond or could find this pond during dispersal events. Such individuals could then be subject to injury or mortality from Project personnel or equipment or could be subjected to adverse effects from reduced water quality. If CRLF attempt to breed in the pond, egg masses and larvae could also be subjected to poor water quality or adverse variations in hydroperiod.

Changes in Hydrology from Mining Activities

Todd Groundwater's analysis of effects of mining on hydrology determined that interception of groundwater flow, as well as surface runoff, could reduce the amount of water reaching areas downslope from mining areas (Todd Groundwater 2016, 2019). A reduction in the amount of water reaching ponds or pools that support CRLF could reduce both breeding and nonbreeding habitat for the species. In waterbodies used for breeding, a reduction in the amount of water flowing into them could cause those waterbodies to dry out before larvae turn into an adult. This would result in mortality of larvae and reduce CRLF populations.

Aside from a known CRLF breeding pond within the geotechnical setback area for the Phase 2 mining area, most ponds and pools would not have their hydrology sufficiently disrupted to the point that adverse effects on habitat or hydrology would occur. Several ponds along the west side of Sargent Creek upstream from Phase 3 and 4 mining areas are unlikely to be affected by mining because no mining activities would occur within the watersheds supporting these ponds. Mining at Pits 3 and 4 could have some impact on the amount of water in Sargent Creek, which could affect the amount of aquatic nonbreeding habitat and vegetative cover for the CRLF within the creek. However, the creek would continue to provide sufficient flow and vegetation that frogs would be able to continue to use that creek as nonbreeding habitat.

Surveys recorded CRLF in a pond south of Pit 3, which would encroach into that pond's watershed but not its footprint. Mining at Pit 3 could redirect some of the surface and groundwater flow feeding the pond, which would reduce the surface area, depth, and hydroperiod, potentially resulting in permanent impacts on the pond's habitat value for CRLF. This reduction in hydrologic input could even result in a categorical change in the pond's use by CRLF, such as changing it from a suitable breeding pond into a pond that no longer holds water long or deep enough to support breeding. This reduction in habitat value would be permanent, as the redirection of surface runoff would continue even after mining has ceased and Pit 3 has been reclaimed. For the reasons discussed above, the impact of Project operation on CRLF would be **significant**.

Reclamation

Similar to the construction and operational phases discussed above, reclamation activities could result in the injury or mortality of CRLF individuals as a result of worker foot traffic, equipment use, or vehicle traffic. Indirect impacts to CRLF and their habitat could also result from impacts to water quality in the ways described in Section 3.4-3 above. Following completion of mining, reclamation of the mining pits, and removal of the processing plant, habitat conditions would be similar to baseline conditions from the perspective of CRLF use. Therefore, the impact of Project reclamation on CRLF would be **significant**.

Summary

Given the number of recorded occurrences of CRLF in or adjacent to the Project area, the species could occur anywhere on the Project site. Therefore, natural habitats (i.e., all areas that are not currently developed) disturbed by the proposed Project, totaling approximately 403 acres, would be considered impacted CRLF habitat. Individual CRLF could be lost during Project construction and operation, and habitat modifications (such as the loss of the breeding pond near Pit 2 and adverse effects on the breeding pond south of Pit 3) could result in reductions in CRLF populations. Therefore, Project impacts on CRLF are considered **significant.**

Mitigation Measure 3.4-4a: The Applicant shall implement the following avoidance and minimization measures for all ground-disturbing activities throughout the life of the Project, including construction, operations, and reclamation, at access roads, bridges over Tar Creek and Sargent Creek, mining areas, and processing facilities, to minimize impacts on CRLF:

1. A biologist approved by the County and USFWS (hereafter “approved biologist”) shall be onsite during all activities that, in the opinion of the approved biologist after consultation with USFWS, may result in impacts to individual CRLF. For example, once a work area is surrounded by exclusion fencing (as described below), any CRLF within that exclusion fencing have been relocated (as described below), and the qualified biologist has surveyed the area within the exclusion fencing well enough to determine that no CRLF are present, activities within the exclusion fencing and on other “developed” areas (e.g., roads and the processing plant) may proceed without the need for a biological monitor. The qualifications of the biologist(s) shall be submitted to the County and USFWS for review and written approval at least 15 calendar days prior to the date earthmoving is initiated at the Project site.
2. Prior to the initiation of any other protective measures, an approved biologist shall determine, in consultation with the USFWS, appropriate relocation sites for any adult, juvenile, or larval CRLF that may be observed during preconstruction surveys and monitoring and that need to be relocated. The approved biologist shall also determine, in consultation with the USFWS, how any CRLF showing evidence of poor health (which might indicate disease such as chytrid) should be handled or disposed of, to avoid translocating diseased individuals into habitat supporting healthy amphibians.
3. The Applicant shall install and maintain exclusion fencing around construction and mining zones, to prevent CRLF from moving into these areas. Exclusion fencing shall be at least 3 ft high, and the lower 6 inches of the fence shall be buried in the ground to prevent animals from crawling under. The remaining 2.5 ft shall be left above ground to serve as a barrier for animals moving on the ground surface. The fence shall be pulled taut at each support to prevent folds or snags. The Applicant shall inspect such fencing regularly (at least weekly) and maintain it in good condition throughout the construction and mining period.
4. The Applicant shall flag or fence construction and mining areas to identify areas where work is permitted to occur, and work activities shall be confined to these areas.
5. An approved biologist shall delineate sensitive habitat areas such as streams, wetlands, and riparian habitats outside the permitted work area with high-visibility flagging or fencing to prevent encroachment of construction and mining personnel

and equipment into any sensitive areas during Project work activities. At no time shall equipment or personnel be allowed to enter, disturb, or otherwise adversely affect these sensitive habitat areas without prior written authorization from the County and USFWS.

6. No more than 24 hours prior to initial ground disturbance for each phase of construction or mining activity, an approved biologist shall conduct a preconstruction survey for the CRLF at the Project site.

    - The survey shall consist of walking the Project limits and within the Project site to ascertain the possible presence of the species. The approved biologist shall investigate all areas that could be used by the CRLF for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as California ground squirrels or gophers.
    - Each encounter with the CRLF shall be treated on a case-by-case basis in coordination with the USFWS, but the general procedure is as follows: (1) the animal shall not be disturbed if it is not in danger; or (2) the animal shall be moved to a secure location if it is in any danger. These procedures are further described below:

7. When a CRLF is encountered, all activities which could result in the harassment, injury, or death of the individual shall be immediately halted. The approved biologist shall then assess the situation in order to select a course of action that would avoid or minimize adverse effects to the animal. To the maximum extent possible, contact with the frog shall be avoided and the Applicant shall allow it to move out of the hazardous situation to a secure location on its own volition. This procedure applies to situations where a CRLF is encountered while it is moving to another location. It does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the species should the individual move away from the hazardous location.

8. CRLF that are in danger shall be relocated and released by the approved biologist outside the construction or mining area within the same riparian area or watershed. If relocation of the frog outside the fence is not feasible (i.e., there are too many individuals observed per day), the approved biologist shall relocate the animals to a USFWS preapproved location. Prior to the initial ground disturbance, the Applicant shall obtain approval of the relocation protocol from the Service in the event that a CRLF is encountered and needs to be moved away from the Project site.

9. The approved biologist shall limit the duration of the handling and captivity of the CRLF to the minimum amount of time necessary to complete the task. If the animal must be held in captivity, it shall be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. The container used for holding or transporting the individual shall not contain any standing water.

10. No construction within creeks or riparian habitats shall occur during the wet season (October 15 to April 15, or as otherwise indicated by the conditions of resource agency permits). Outside of creeks and riparian habitats, when ground-disturbing activities in any given location commence between October 15 and April 15, daily monitoring by an approved biologist shall occur for the CRLF until April 16 or until all clearing and grubbing have been completed and the work area is completely

surrounded by wildlife exclusion fencing, at which time CRLF would no longer be able to enter the work area.

11. To minimize harassment, injury death, and harm in the form of temporary habitat disturbances, all Project-related vehicle traffic shall be restricted to established roads, construction and mining areas, equipment staging, storage, parking, and stockpile areas. These areas shall be delineated by the Applicant in preconstruction surveys and shall be established in locations disturbed by previous activities whenever feasible unless otherwise approved by the County Planning Department.
12. Project-related vehicles shall observe a 15 mile per hour speed limit within construction and mining areas, except on County roads, and State and Federal highways. Off-road traffic outside of designated and fenced Project work areas shall be prohibited.
13. The Applicant shall ensure bio-swales and bio-filtration are installed at the Project site adjacent to roadways to avoid and minimize sediment loading and point source pollutants.
14. If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 5 millimeters to prevent CRLF from entering the pump system. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.
15. Uneaten human food and trash attracts crows, ravens, coyotes, and other predators of the CRLF. A litter control program shall be instituted by the Applicant for construction, operations, and reclamation work. All workers shall ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers shall be removed from the Project area at the end of each working day.
16. No insecticides or herbicides shall be used during construction or operations where there is the potential for these chemical agents to enter creeks, streams, waterbodies, or uplands that contain suitable habitat for the CRLF.
17. No canine or feline pets or firearms (except for federal, state, or local law enforcement officers and security personnel) shall be permitted at the Project site to avoid and minimize harassment, injury, and death of the CRLF.
18. For onsite storage of pipes, conduits and other materials that could provide shelter for CRLF, the Applicant shall use an open-top trailer or some other means to elevate the materials above ground. This is intended to reduce the potential for animals to climb into the conduits and other materials.
19. To the maximum extent practicable, no construction activities shall occur during rain events (i.e., when rain hits the ground) or within 24-hours following a rain event. Prior to construction activities resuming after a rain event, an approved biologist shall inspect the action area and all equipment/materials for the presence of CRLF.
20. To the maximum extent practicable, night-time construction shall be minimized or avoided by the Applicant because dusk and dawn are often the times when the CRLF is most actively moving and foraging. Because dusk and dawn are often the times

when the CRLF is most actively moving and foraging, to the maximum extent practicable, earthmoving and construction activities will cease no less than 30 minutes before sunset and will not begin again prior to no less than 30 minutes after sunrise.

21. Plastic monofilament netting (erosion control matting), loosely woven netting, or similar material in any form shall not be used at the Project site because CRLF can become entangled and trapped in them. Any such material found on site shall be immediately removed by the approved biologist, construction or mining personnel, or the Applicant. Materials utilizing fixed weaves (strands cannot move), polypropylene, polymer or other synthetic materials shall not be used.

22. Trenches or pits one (1) foot deep or more that are going to be left unfilled for more than forty-eight (48) hours shall be securely covered by the Applicant with boards or other material to prevent the CRLF from falling into them, unless slopes leading out of the pits are suitable to allow CRLF to leave on their own. If this is not possible, the Applicant shall ensure wooden ramps or other structures of suitable surface that provide adequate footing for the CRLF are placed in the trench or pit to allow for their unaided escape. The trench, pit, or hole also shall be examined by the approved biologist each workday morning during construction at least one hour prior to initiation of work and in the late afternoon no more than one hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the approved biologist shall remove and transport it to a safe location or contact the USFWS for guidance.

23. The approved biologist(s) shall permanently remove any aquatic non-native wildlife species, such as bullfrogs and crayfish from the Project site, to the maximum extent possible.

Mitigation Measure 3.4-4b: The Applicant shall implement the following avoidance and minimization measures for certain operational activities:

1. Impacts on the known CRLF breeding pond in the Phase 2 geotechnical setback shall be avoided, if feasible, so that this pond is not lost (i.e., so that the pond is not removed, filled, or drained so that it no longer provides suitable amphibian breeding habitat). If loss of this pond is unavoidable, compensatory mitigation will be provided as described in Mitigation Measure 3.4-4c(3).

2. If mining activity that directly disturbs any pools or ponds within a mining pit, including retention basins, experiences a lull of at least 7 days, an approved biologist shall conduct a survey of the pool, pond, or basin for all life stages of the CRLF before mining in that waterbody resumes. Any individuals detected shall be captured (e.g., via dipnet, seine, or other means suitable for the life stage in question) and relocated to the nearest habitat suitable for the life stage in question (e.g., egg masses and larvae shall be moved to other ponds or pools with suitable hydroperiod for successful metamorphosis) by the approved biologist.

3. The Applicant shall install wildlife exclusion fencing around the storage pond within the processing plant to prevent special-status species such as CRLF from entering the pond. Exclusion fencing shall be at least 3 ft high, and the lower 6 inches of the fence shall be buried in the ground to prevent animals from crawling under. The remaining 2.5 ft shall be left above ground to serve as a barrier for animals moving on the ground surface. The fence shall be pulled taut at each support to prevent folds or

snags. Such fencing shall be inspected regularly (at least weekly) and maintained in good condition throughout the period of the plant's operation.

4. All lighting on the site, including security lighting (remain on throughout the night but shall be turned off if feasible) and lighting used during the plant's hours of operation, shall be minimized in terms of intensity, height of lights, extent (i.e., dispersion around the processing plant), and spillover into adjacent areas. A detailed lighting plan shall be provided to the County Department of Planning and Development for review and approval as part of the processing plant building permit or any grading permit submittal, whichever occurs first. The lighting plan shall show the fixture locations and specifications. All lighting shall be pointed downward and shielded. A photometric plan shall be included showing the lumens (or other similar measurement) for each fixture at the site. Light spillover outside of the processing plant shall be limited, and no fixtures shall be installed on the east side of the processing plant.

5. Fencing with screening shall be installed around as much of the main plant as possible, as described in Mitigation Measure 3.4-15.2.

Mitigation Measure 3.4-4c: The Applicant shall provide compensatory mitigation for impacts to CRLF habitat as follows:

1. Prior to initiation of impacts, a qualified biologist will determine the extent of impacts on CRLF habitat based on the acreage of all non-developed habitat to be impacted. The pond in the Phase 2 geotechnical setback area and the pond immediately south of Phase 4 that will be altered hydrologically by mining will be considered breeding habitat, and all other non-developed habitat to be impacted will be considered nonbreeding habitat.

2. The Applicant shall provide mitigation to compensate for unavoidable impacts on CRLF nonbreeding habitat (e.g., upland habitat and nonbreeding aquatic habitat) through the preservation, management, and enhancement (e.g., through long-term management targeted toward this species) of high-quality habitat that is already occupied by the CRLF at a ratio of at least 2:1 (mitigation:impact), on an acreage basis, or as determined through the consultation and/or permitting process with USFWS. This 2:1 mitigation ratio is not lower because CRLF appear to regularly use the Project site and breed in or near impact areas, so that a 2:1 mitigation ratio is deemed necessary to offset Project impacts, but it is not higher because Project areas will be restored to conditions suitable for CRLF following completion of mining. First priority for compensatory mitigation sites shall be areas located on Sargent Ranch. Off-site mitigation shall only be used if on-site mitigation cannot fully compensate for habitat losses.

3. The Applicant shall provide mitigation to compensate for unavoidable impacts on CRLF breeding habitat, including the pond in the Phase 2 geotechnical setback area (if it will be lost or permanently drained) and the pond immediately south of Phase 4 that will be altered hydrologically by mining, through one or both of the following methods, or equivalent or more effective methods as determined through the consultation and/or permitting process with USFWS:

   - the creation of aquatic habitat suitable for CRLF breeding that could support the species at a 2:1 (mitigation:impact) ratio, on an acreage basis

- the enhancement of degraded aquatic habitat that is unsuitable for use by CRLF, but that is in close proximity to areas of known occurrence and can be made more suitable for use via the eradication of aquatic predators (e.g., bullfrogs and predatory fish) at a 3:1 mitigation ratio, on an acreage basis.

First priority for compensatory mitigation sites shall be areas located on Sargent Ranch. Off-site mitigation shall only be used if on-site mitigation cannot fully compensate for habitat losses.

4. A qualified biologist shall develop an HMMP describing the measures that shall be taken to manage the created/enhanced breeding and upland habitat described above and to monitor the effects of management on the CRLF. The HMMP shall be submitted to the County Department of Planning and Development for review and approval prior to the start of any ground-disturbing activities. The County may retain a qualified biologist at the Applicant's expense to peer-review the HMMP. The HMMP shall include the following:

- a summary of impacts on CRLF habitat and populations, and the proposed mitigation;
- a description of the location and boundaries of the mitigation site and description of existing site conditions;
- a description of measures to be undertaken if necessary, to enhance (e.g., through focused management) the mitigation site for CRLF;
- proposed management activities, such as managed grazing, management of invasive plants, measures targeted at sustaining populations of burrowing mammals, or other measures to maintain high-quality habitat for CRLF;
- a description of species monitoring measures on the mitigation site, including specific, goals and objectives (such as maintaining or increasing abundance of CRLF or maintaining or improving habitat suitability), performance indicators and success criteria (such as presence or abundance of upland refugia or hydroperiod of breeding habitat), monitoring methods (such as sampling of upland refugia or monitoring of the hydroperiod of breeding habitat), data analysis, reporting requirements, and monitoring schedule. At a minimum, performance criteria shall include occupation by the CRLF of created aquatic habitat;
- a description of the management plan's adaptive management component, including a description of how management may be adapted depending on climate change or other changes in site conditions and the process by which adaptive management decisions will be made and implemented, as well as contingency measures for mitigation elements that do not meet performance criteria; and
- a description of the funding mechanism for the long-term maintenance and monitoring of the mitigation lands.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-3 and 3.4-4a through 3.4-4c would reduce impacts on CRLF to a less-than-significant level by minimizing impacts of construction, operations, and reclamation on water quality so that no individuals are lost as a result of water-quality impacts; avoiding and minimizing injury or mortality of individual CRLF, and impacts on this species' habitat, during construction, operations, and reclamation; and compensating for impacts to individual CRLF and their habitat so that the Project does not cause a net reduction in this species' populations, while allowing for construction, operations, and reclamation to proceed under specific circumstances specified in the mitigation without a full time biological monitor. Implementation of Mitigation Measure 3.4-1b would reduce the potential for pathogens such as chytrid to be introduced and/or spread during construction, operations, and reclamation activities. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on CRLF and their habitats by training Project personnel on this species, its habitats, and measures necessary to avoid and minimize impacts. Because the Project has a limited (30-year) period in which mining would occur, and Project areas would be restored to natural habitat following completion of mining and reclamation, the mitigation measures, would ensure that this species' populations are not reduced by the Project. Implementation of the mitigation measures could result in impacts to CRLF; for example, relocation of individuals could result in injury of some individuals, and individuals that are relocated could increase competition within the relocation areas or spread disease to the relocation areas. However, the overall effects of mitigation would reduce the impact to **less than-significant** levels.

Impact 3.4-5: Project activities would result in adverse effects on California tiger salamanders (CTS) and their habitat. (Less than Significant with Mitigation)

Four CTS larval survey efforts conducted on the larger Sargent Ranch property (in 2000-2001, 2004, 2005, and 2017) detected CTS larvae only once on the Project site (LOA 2017a, 2017b). In 2000-2001, larvae were in a pool in a seasonal wetland in Phase 1. However, monitoring of the pool in that year and subsequent years determined that the pool did not hold water long enough for breeding to be successful. Therefore, CTS are not known to have bred successfully on the Project site. CTS breeding in ponds approximately 0.85 mile north of the Project site could disperse onto the Project site, and the pond in the Phase 2 geotechnical setback area could potentially be used for breeding by this species. The species could use upland habitat anywhere on the Project site for dispersal and refugia. However, it is apparently scarce in the Project area, based on the presence of only one detection despite intensive survey effort.

Construction

Construction activities could result in the injury or mortality of individual CTS in the same manner as described for CRLF in Impact 3.4-4. No suitable breeding habitat would be disturbed during construction, and CTS do not focus their activities near streams, ponds, and wetlands to the extent that CRLF do. As a result, adverse effects of construction activities on water quality would not affect CTS as much as they would CRLF. Nevertheless, small numbers of adult and juvenile CTS could be present during dispersal, or in refugia such as small mammal burrows, in upland areas throughout the Project site. Construction activities may result in the injury or mortality of individuals as a result of worker foot traffic, equipment use, or vehicle traffic. Substrate vibrations may cause individuals to move out of refugia, exposing them to a greater risk of predation or desiccation. In addition, CTS may be crushed, or trapped and suffocated, in refugia by the passage of heavy equipment. Construction activities could impede movements by CTS by altering topography or placing stockpiles of materials along potential movement pathways, though there are no areas that CTS would be completely unable to move through or around.

Construction of roads, structures, and related facilities will occur over a 9-month period, and therefore will overlap the wet season when the majority of CTS movement occurs. Although the majority of initial grading for any of the Project phases, and the processing plant area, would occur primarily during the dry season, when CTS are unlikely to be moving above-ground, individuals could be present in refugia such as small mammal burrows in upland areas, year-round.

Increases in human concentration and activity in the vicinity of suitable habitat may result in an increase in native and non-native predators that would be attracted to trash left at the work site and that would prey opportunistically on CTS. Movement of Project personnel and equipment within the site, and between on-site and off-site areas, could also spread pathogens such as chytrid fungus, which can impair the health of amphibians such as CTS.

Impacts on CTS would be reduced by implementation of the conditions of permits and approvals. For example, conditions of the permits necessary to construct the bridges and to impact wetland, creek, and riparian habitats during mining activities would include conditions requiring the implementation of measures to avoid and minimize impacts to water quality and to aquatic and amphibious species such as CTS. In addition, the Project may be required to obtain FESA incidental take approval from the USFWS and CESA incidental take approval from CDFW, given the 2000-2001 occurrence of CTS within the Project area. These FESA and CESA incidental take approvals would address the effects of both construction and operational activities. USFWS and CDFW incidental take approval would include conditions to reduce and compensate for impacts to CTS. Nevertheless, because resource agency permits and approvals have not yet been issued and the conditions of those permits are not yet known with certainty, Project construction could result in impacts on CTS. Therefore, the impact of Project construction on CTS would be **significant**.

Operation

Mining Pits

Operational activities could also adversely affect CTS. No known breeding ponds for CTS would be disturbed by the Project, and given that the CTS larval surveys performed over a 17-year span at Sargent Ranch found that the species is not abundant in the area, it is unlikely that CTS would be breeding in ponds where they have not been detected by those surveys. Therefore, it is unlikely that ponds to be adversely affected by the Project, either directly (i.e., the pond in the Phase 2 geotechnical setback area) or indirectly (i.e., the pond immediately south of the proposed Phase 3 mining area) as described for known CRLF breeding ponds in Impact 3.4-4 above, serve as CTS breeding ponds. Nevertheless, impacts on these ponds, as described for CRLF in Impact 3.4-4 above, would reduce habitat that could be used by breeding CTS in the future if the species became more abundant in this portion of Sargent Ranch.

During mining operations, individual CTS could be adversely affected in the same ways described above for construction activities. For example, individuals could be injured or killed by foot traffic, equipment, and vehicles, both during new groundbreaking in mining pits, during mining activities, and during movement of people around the site. As described for construction activities above, CTS could be affected by greater concentrations of predators attracted to anthropogenic food waste, and Project personnel and equipment could introduce or spread amphibian diseases such as chytrid fungus. Operational activities such as pit excavation could impede movements by CTS by altering topography or placing stockpiles of materials along movement pathways, though there are no areas that CTS would be completely unable to move through or around.

During mining, CTS could attempt breeding in new ponds and pools that form in the mining pits, or retention basins that are constructed in the pits. If CTS were to lay eggs in those pools, then mining activities could destroy the eggs, and any artificial drawdown of the pools (e.g., by pumping of water into retention basins) could strand, or cause the desiccation of, eggs or larvae. Mining could therefore impact all life stages of the species within pools that form, or are constructed, in the pits. If enough CTS were attracted to these pools, then impacted, these pools could serve as population sinks; however, results of the relatively intensive CTS surveys conducted 2000-2017 indicate that CTS are not abundant in the Project area, and it is therefore unlikely that mining pits would attract CTS away from more suitable breeding locations to the point of causing a long-term decline in local CTS populations.

Processing Plant

The processing plant would include a 0.52-acre storage pond. CTS could be attracted to this pond or could find this pond during dispersal events. Such individuals could then be subject to injury or mortality from Project personnel or equipment, or could be subjected to adverse effects from reduced water quality. If CTS attempt to breed in the pond, egg masses and larvae could also be subjected to poor water quality or adverse variations in hydroperiod.

Effects of Mining on Sargent Creek

CTS do not regularly use streams as habitat; rather, they breed in pools or ponds. As a result, any effects of mining on the hydrology of Sargent Creek (e.g., as discussed for CRLF in Impact 3.4-4) would not have any substantive impact on CTS or their habitat.

Loss of Upland Dispersal and Refugial Habitat

Project operations would result in the loss of upland dispersal and refugial habitat of CTS, within the footprints of the mining pits and any portions of the geotechnical setback areas and overburden stockpile areas that need to be disturbed, during the period in which mining occurs.

As noted under Construction, impacts on CTS during operations would be reduced by implementation of the conditions of permits and approvals. However, because resource agency permits and approvals have not yet been issued and the conditions of those permits are not yet known with certainty, Project operations could result in impacts on CTS, and this impact would be **significant**.

Reclamation

During mining operations, individual CTS could be adversely affected in the same ways described above for construction activities. For example, individuals could be injured or killed by foot traffic, equipment, and vehicles, both during new groundbreaking in mining pits, during mining activities, and during movement of people around the site. Following completion of mining, reclamation of the mining pits, and removal of the processing plant, habitat conditions would be similar to baseline conditions from the perspective of CTS use. The impact of Project reclamation on CTS would be **significant**.

Summary

Given the dispersal capabilities of CTS, with individuals potentially moving up to 1.3 miles from breeding locations (Orloff 2007), the species could occur on the Project site. Therefore, all impacted natural habitat (i.e., all areas that are not currently developed) would be considered impacted CTS nonbreeding habitat. Considering construction and operational activities together, the Project would result in the disturbance of up to approximately 403 acres of suitable habitat for this species. No known or high-quality breeding habitat would be impacted, though it is possible that the species could breed in the stock pond in the Phase 2 geotechnical setback area and in the pond south of the Phase 4 mining area. Given the detection of CTS only once during four years of larval surveys conducted from 2000 to 2017, this species is likely present in the Project area only in low numbers. As a result, the Project's effects on the species would be relatively low. Individual CTS could be lost during Project construction, operations, and reclamation, and habitat modifications (such as the loss of upland dispersal and refugial habitat during mining operations) could result in some reductions in CTS populations. Therefore, impacts on CTS would be **significant**.

> **Mitigation Measure 3.4-5a:** The Applicant shall implement all impact avoidance and minimization measures described in Mitigation Measures 3.4-4a and 3.4-4b for the CRLF to reduce impacts on CTS, and shall consult with CDFW (e.g., for approval of biologists and relocation areas, and for approval conditions in which no take of individual CTS is anticipated to occur within an area and site monitoring by the qualified biologist is no longer necessary) in addition to the County and USFWS for all measures involving CTS.
>
> **Mitigation Measure 3.4-5b:**
>
> 1. Prior to initiation of impacts, a qualified biologist will determine the extent of impacts on CTS habitat based on the acreage of all non-developed habitat to be impacted.
>
> 2. The Applicant shall provide mitigation to compensate for unavoidable impacts on CTS nonbreeding habitat (e.g., upland habitat and nonbreeding aquatic habitat) through the preservation, management, and enhancement (e.g., through long-term management targeted toward this species) of high-quality habitat that is already occupied by the CTS at a ratio of at least 1:1 (mitigation:impact), on an acreage basis, or as determined through the consultation and/or permitting process with USFWS

and CDFW. This 1:1 mitigation ratio is not lower because CTS are expected to be present on the Project site at least in low numbers, so that a 1:1 mitigation ratio is deemed necessary to offset Project impacts, but it is not higher because surveys have documented that the species is scarce in the Project area (so that effects of the Project on this species' populations would be low), and Project areas would be restored to conditions suitable for CTS following completion of mining. If CTS are recorded breeding successfully in the stock pond in the Phase 2 geotechnical setback area and that pond is subsequently impacted, or in the pond adjacent to the Phase 4 mining area that will be impacted indirectly as a result of reduction in the pond's watershed, the Applicant shall provide mitigation for impacts to those breeding habitats at a ratio of at least 1:1, on an acreage basis, or as determined through the consultation and/or permitting process with USFWS and CDFW; mitigation for lost breeding habitat shall consist of creation, preservation, and management of CTS breeding habitat. The same mitigation areas established for CRLF can be used for CTS if both species are documented to be present.

First priority for compensatory mitigation sites shall be areas located on Sargent Ranch. Off-site mitigation shall only be used if on-site mitigation cannot fully compensate for habitat losses.

3. The HMMP described for CRLF in Mitigation Measure 3.4-6 will also describe the measures that shall be taken to manage the created/enhanced habitat and to monitor the effects of management on CTS. The HMMP shall be submitted to the County Department of Planning and Development for review and approval prior to the start of ground-disturbing activities. The County may retain a qualified biologist at the Applicant's expense to peer-review the HMMP. The HMMP shall include the following:

   - a summary of impacts on CTS habitat and populations, and the proposed mitigation;
   - a description of the location and boundaries of the mitigation site and description of existing site conditions;
   - a description of measures to be undertaken if necessary to enhance (e.g., through focused management) the mitigation site for CTS, including creation of new breeding habitat (if the Project impacts areas known to have been used for successful breeding by CTS);
   - proposed management activities, such as managed grazing, management of invasive plants, measures targeted at sustaining populations of burrowing mammals, and other measures to maintain high-quality habitat for CTS;
   - a description of species monitoring measures on the mitigation site, including specific, objective goals and objectives (such as maintaining or increasing abundance of CTS or maintaining or improving habitat suitability), performance indicators and success criteria (such as presence or abundance of upland refugia), monitoring methods (such as sampling of upland refugia), data analysis, reporting requirements, and monitoring schedule. At a minimum, performance criteria shall include demonstrated occurrence of CTS on the mitigation site;
   - a description of the management plan's adaptive management component, including a description of how management may be adapted depending on

climate change or other changes in site conditions and the process by which adaptive management decisions will be made and implemented, as well as contingency measures for mitigation elements that do not meet performance criteria; and

- a description of the funding mechanism for the long-term maintenance and monitoring of the mitigation lands.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-3 would benefit CTS by reducing impacts on water quality and aquatic habitats. Mitigation Measures 3.4-4a and 3.4-4b and Mitigation Measure 3.4-5a would avoid and minimize injury or mortality of individual CTS during construction, operations, and reclamation and minimize impacts on this species' habitat. Mitigation Measure 3.4-5b would offset Project impacts on CTS and their habitat by compensating for impacts to individual CTS and their habitat so that the Project does not cause a net reduction in this species' populations. Implementation of Mitigation Measure 3.4-1b would reduce the potential for introduction and/or spread of pathogens such as chytrid. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on CTS and their habitats by training Project personnel on this species, its habitats, and measures necessary to avoid and minimize impacts, while allowing for construction, operations, and reclamation to proceed under specific circumstances specified in the mitigation without a full-time biological monitor. Collectively, implementation of these mitigation measures would reduce impacts on CTS to less-than-significant levels. Because the Project has a limited (30-year) period in which mining would occur, and Project areas would be restored to natural habitat following completion of mining and reclamation, the mitigation measures would ensure that this species' populations are not reduced by the Project. Implementation of the mitigation measures could result in impacts to CTS; for example, relocation of individuals could result in injury of some individuals, and individuals that are relocated could increase competition within the relocation areas or spread disease to the relocation areas. However, the overall effects of mitigation would reduce to the impact to less-than-significant levels.

Impact 3.4-6: Project activities would result in adverse effects on western pond turtles and their habitat. (Less than Significant with Mitigation)

Western pond turtles have been documented in a pond approximately 1,100 feet south of the proposed processing plant location (as shown in Figure 3.4-4). Although there are no known occurrences of western pond turtles within Sargent Creek or Tar Creek, both of these creeks may provide foraging and movement habitat for this species (though occurrence in Sargent Creek is likely limited to lower reaches, downstream from the Project site, due to the brevity of flow in upper reaches closer to the Project site). It is possible that western pond turtles could also occur in the stock pond in the Phase 2 geotechnical setback area, and a pond along Sargent Creek near the Phase 4 mining area, though the species has not been recorded in these locations during multiple herpetological surveys conducted at Sargent Ranch (LOA 2017a, 2017b), so it does not occur there regularly or in large numbers, if at all. Neither Sargent Creek nor Tar Creek in the Project vicinity provides large pools with extensive basking habitat, and therefore the species does not occur in large numbers in or near the Project area. The species could nest in upland areas of the Project site, though occurrence in upland areas for nesting or dispersal between aquatic habitats would be infrequent.

Construction

Proposed construction activities could result in the injury or mortality of individual western pond turtles. Small numbers of individuals could be present along Tar Creek and Sargent Creek where crossings would be constructed, and there is some potential (albeit low) that individuals could be present in upland areas where grading would occur. Construction activities might also result in the injury or mortality of individuals as a result of worker foot traffic, equipment use, or vehicle traffic. In the unlikely event (given the lack of high-quality aquatic habitat) that the species nests in the Project area, grading and movement of heavy equipment could destroy nests. Grading and other construction activities could impede upland movements by western pond turtles by altering topography or placing stockpiles of materials along movement pathways, though the effects of such impacts would be limited given that this species occurs primarily along streams, which would be subject to only limited Project construction activity. For these reasons, the impact of Project construction on western pond turtles would be **significant**.

Water Quality Impacts

Indirect impacts to western pond turtles and their habitat could also result from impacts to water quality in the ways described in Impact 3.4-3 above. Water-quality impacts could include reduction in the suitability of aquatic foraging habitat, which could reduce food abundance, and pollutants could affect the health of both western pond turtles and their food. Increases in human concentration and activity in the vicinity of suitable habitat may result in an increase in native and non-native predators that would be attracted to trash left at the work site and that would prey opportunistically on western pond turtles.

Bridge Construction

Because the bridge proposed over Tar Creek would be a free-span bridge and the crossing over Sargent Creek would be an arch culvert, no significant loss of aquatic habitat occupied by the species would result from construction activities. However, construction would result in the direct loss of suitable upland dispersal and nesting habitat for the species.

Construction impacts on western pond turtles would be reduced by implementation of the conditions of permits and approvals. For example, conditions of the permits necessary to construct the bridges and to impact wetland, creek, and riparian habitats during mining activities (from the USACE under Section 404 of the CWA, the RWQCB under Section 401 of the CWA and/or the Porter-Cologne Water Quality Control Act, and the CDFW under Section 1600 of the California Fish and Game Code) would include conditions requiring the implementation of measures to avoid and minimize impacts to water quality and to aquatic species such as the western pond turtle. Implementation of the conditions in these permits would reduce impacts on western pond turtles and their aquatic habitats. Nevertheless, because resource agency permits and approvals have not yet been issued and the conditions of those permits are not yet known with certainty, Project construction and operations could result in impacts on western pond turtles.

Operation

During mining operations, individuals could be adversely affected in the same ways described above for construction activities. Pond turtles could be injured or killed by foot traffic, equipment, and vehicles, during mining activities and during movement of people around the site. If the species nests in the Project area, mining and movement of heavy equipment could destroy nests. As described for construction activities above, impacts on water quality could occur during Project operations, and western pond turtles could be affected by greater concentrations of predators attracted to human generated food waste. Operational activities such as pit excavation could impede movements by turtles by altering topography or placing stockpiles of materials along movement pathways, though overland movement by turtles through the mining areas likely occurs little, if at all, and there are no areas that western pond turtles would be completely unable to move through or around.

Mining Pits

Surveys conducted over a 17-year period at Sargent Ranch have not detected the species, and this species' use of habitat within the Project area is therefore low if the species occurs there at all. Nevertheless, direct and indirect impacts from mining operations on the pond in the Phase 2 geotechnical setback area and the pond immediately south of the proposed Phase 3 mining area could reduce aquatic habitat for western pond turtles. In addition, during mining, western pond turtles could occupy any ponds and pools that form in the mining pits, or retention basins that are constructed in the pits. Mining activities could injure or kill turtles that colonize the pools, although it is unlikely that mining pits would attract western pond turtles away from more suitable off-site breeding locations to the point of causing a long-term decline in local populations. Project operations would also result in the loss of upland dispersal and nesting habitat for western pond turtles, within the footprints of the mining pits and any portions of the geotechnical setback areas and overburden stockpile areas that need to be disturbed, during the period in which mining occurs.

Processing Plant

The processing plant would include a 0.52-acre storage pond. Western pond turtles dispersing through the area could take residence in this pond. Such individuals could then be subject to injury or mortality from Project personnel, equipment, or could be subjected to adverse effects from reduced water quality. Western pond turtles have been recorded 1,100 feet south of the processing plant, and therefore could potentially disperse to this pond. However, the probability and magnitude of impacts on the species is low given the low numbers of occurrences in the vicinity.

Changes in Hydrology

Todd Groundwater's analysis of effects of mining on hydrology determined that interception of groundwater flow, as well as surface runoff, could reduce the amount of water reaching areas downslope from mining areas (Todd Groundwater 2016, 2019). A reduction in the amount of water reaching ponds or pools within streams that provide habitat for western pond turtles could reduce aquatic habitat for this species. This impact could occur as described in Impact 3.4-4 for the CRLF. However, due to the paucity of records of this species from the Project vicinity, reductions in ponding or flow in waterbodies in and downstream from the Project area would have little impact on western pond turtles and would not result in reductions in this species' populations.

For all the reasons discussed above, the impact of Project operations on western pond turtles would be **significant**.

Reclamation

Following completion of mining, reclamation of the mining pits and removal of the processing plants would restore their use as upland dispersal habitat for the species, to the extent that they are currently used at all. Although ponds and pools associated with mining pits that attract western pond turtles would be removed, individuals dispersing through the area during reclamation activities could be subject to injury or mortality from Project personnel or equipment. Although the species has not been recorded in the Project area itself, and the species' use of habitat within the Project area is low, the impact of Project operations on western pond turtles would be **significant**.

Summary

Although surveys occurring over a long period (2000-2017) have only detected this species in only one location, outside the Project site, given the dispersion of ponds and streams on and near the Project site, and the potential for western pond turtles to occasionally disperse overland among waterbodies or to nest, western pond turtles could occasionally occur virtually anywhere on the Project site. Therefore, all impacted natural habitat (i.e., all areas that are not currently developed) would be considered potential western pond turtle habitat. Considering construction and operational activities together, the Project would result in the disturbance of up to approximately 403.29 acres of potential habitat for this species. However, the magnitude of impacts of the Project on this species' populations, and on occupied habitat important to this species' populations, would be low. This species is not listed under FESA or CESA, but it is a regionally scarce species. Although the Project would not impact habitat important to regional populations of this species, the Project could result in the loss of individuals during habitat modifications, and the loss of individual western pond turtles could result in a decline in this species' population. Therefore, Project construction, operations, and reclamation impacts on western pond turtles are considered **significant**.

> **Mitigation Measure 3.4-6:** The Applicant shall implement all impact avoidance and minimization measures described in Mitigation Measures 3.4-3 for water quality and 3.4-4a and 3.4-4b for the CRLF for the western pond turtle, and CDFW will be consulted (e.g., for approval of biologists and relocation areas) in addition to the County for all measures involving this species.
>
> **Significance after Mitigation:** Less than significant.
>
> Implementation of Mitigation Measure 3.4-3 would benefit western pond turtles by reducing impacts on water quality and aquatic habitats. Mitigation Measures 3.4-4a and 4b and Mitigation Measure 3.4-6 would avoid and minimize injury or mortality of individual western pond turtles during construction, operations, and reclamation and minimize impacts on this species' habitat. Implementation of Mitigation Measure 3.4-1c

would further reduce impacts on western pond turtles and their habitats by training Project personnel on this species, its habitats, and measures necessary to avoid and minimize impacts. Collectively, implementation of these mitigation measures would reduce impacts on western pond turtles to less-than-significant levels. No compensatory mitigation for impacts to this species is necessary because the species has not been recorded in the Project area itself, and the species' use of habitat within the Project area is low if the species occurs there at all. Nevertheless, implementation of Mitigation Measure 3.4-4c and 3.4-5b for the CRLF and CTS, respectively, would benefit this species if western pond turtles are present in the areas where compensatory mitigation is provided for those species. Because the Project has a limited (30-year) period in which mining would occur, and Project areas would be restored to natural habitat following completion of mining and reclamation, the mitigation measures, coupled with ultimate reclamation of the site, would ensure that this species' populations are not reduced by the Project. Implementation of the mitigation measures could result in impacts to western pond turtles; for example, relocation of individuals could result in injury of some individuals, and individuals that are relocated could increase competition within the relocation areas. However, the overall effects of mitigation would reduce this impact to less-than-significant levels.

Impact 3.4-7: Project activities would result in adverse effects on burrowing owls and their habitat. (Less than Significant with Mitigation)

Burrowing owl breeding populations have declined precipitously throughout Santa Clara County in recent decades, a decline that seems to have accelerated in recent years. As a result, many locations that supported nesting burrowing owls 15 to 20 years ago (and even more recently) no longer support the species. The VHP's 2018 countywide breeding burrowing owl survey included visits to Sargent Ranch on April 24 and May 23; no owls were observed in those surveys (Santa Clara Valley Habitat Agency 2018), and no burrowing owls have been recorded breeding in southern Santa Clara County during VHP surveys in 2019 or 2020 (Santa Clara Valley Habitat Agency 2019, 2020). No burrowing owls have been recorded within the Sargent Quarry Project area. However, burrowing owls have been observed foraging on the greater Sargent Ranch property, and a pair nested as recently as 2015 on the northern portion of the property, outside of the Project area. The Project area is likely used primarily or solely by wintering owls. This species is not listed under FESA or CESA, but it is a regionally scarce species. The significance threshold for habitat modification of special-status species is any measurable alteration of the habitat that would result in a drop in the population of the species.

Construction

If burrowing owls are present in areas disturbed by Project construction, they could be injured or killed by heavy equipment if occupied burrows are destroyed or compacted. Such impacts would be most likely to affect nonbreeding owls (e.g., in winter). Construction activities such as grading or movement of construction personnel or heavy equipment near (e.g., within 250 feet of) an occupied burrow could disturb owls to the point of abandoning the burrow. This could result in the loss of a wintering burrow, forcing the owl to relocate. Increases in human concentration and activity in the vicinity of suitable habitat may result in an increase in native and non-native predators that would be attracted to trash left at the work site and that could prey opportunistically on burrowing owls. Construction would also result in the loss of foraging and roosting habitat for burrowing owls.

These impacts would not be reduced appreciably by implementation of the conditions of permits and agency approvals, as burrowing owls roost in upland areas where conditions of CWA, Porter-Cologne Water Quality Control Act, and California Fish and Game Code permits would not apply. Therefore, the impact of Project construction on burrowing owl would be **significant**.

Operation

Operational activities could impact burrowing owls in the same ways described above for construction activities, with mining activities causing the loss of grassland that could be used as roosting and foraging habitat by burrowing owls. Therefore, the impact of Project operations on burrowing owl would be **significant**.

Reclamation

Activities associated with reclamation could impact burrowing owls in the same ways described above for construction activities. However, reclamation would restore grassland that could be used as roosting and foraging habitat by burrowing owls. Following completion of mining, reclamation of the mining pits, and removal of the processing plant, habitat conditions would be like baseline conditions from the perspective of burrowing owl use. Nevertheless, the impact of Project reclamation on burrowing owl would be **significant**.

Summary

Considering construction and operational activities together, the Project would result in the disturbance of up to 337.3 acres of grassland providing potential habitat for this species. However, this area is not known or expected to be used by breeding burrowing owls and comprises a very limited portion of the greater South Bay Area nonbreeding habitat. Therefore, the Project would not result in substantial impacts to this species' breeding or nonbreeding habitat. Although the Project would not have a significant impact on this species' habitat, the Project could result in the loss of individuals during habitat modifications, and the loss of individual burrowing owls could result in a decline in this species' wintering population. Therefore, Project construction and operational impacts on burrowing owls would be **significant**.

> **Mitigation Measure 3.4-7:** The Applicant shall implement the following measures (based on those contained within Condition 15 of the VHP) prior to groundbreaking activities for each phase of the Project (construction, operations, and reclamation) to ensure that individual burrowing owls are not injured or killed as a result of Project activities.
>
> Prior to any ground disturbance associated with the Project (including vegetation removal; construction of individual Project components, such as roads, conveyor belts, and mining infrastructure; and ground disturbance associated with the start of mining activities associated with each new mining phase), a qualified biologist retained by the Applicant shall conduct preconstruction surveys in all suitable burrowing owl habitat

areas on and within 250 feet of the area in which ground disturbance is proposed. To maximize the likelihood of detecting owls, the preconstruction survey shall last a minimum of three hours. The survey shall begin one hour before sunrise and continue until two hours after sunrise (three hours total) or begin two hours before sunset and continue until one hour after sunset. A minimum of two surveys shall be conducted (if owls are detected on the first survey, a second survey is not needed). Owls observed shall be counted and their location shall be mapped. Surveys shall conclude no more than two calendar days prior to construction; thus, surveys must begin no less than four days prior to the start of construction, operations, or reclamation activities (two days of surveying plus up to two days between surveys and construction).

To avoid last-minute changes in schedule that may occur if burrowing owls are found, a preliminary survey may be conducted up to 14 days before construction. This preliminary survey may count as the first of the two required surveys, as long as the second survey concludes no more than two calendar days in advance of construction. Should the preconstruction survey determine the presence of burrowing owls on or within 250 feet the site, then the Applicant shall implement the following avoidance measures.

a. Avoidance during the Breeding Season. If evidence of burrowing owls is found during the breeding season (February 1 to August 31), all nesting or roosting sites that could be disturbed by Project construction shall be avoided during the remainder of the breeding season (if owls remain throughout the breeding season) or while the nest (i.e., a burrow occupied during the period February 1 to August 31) is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). Although burrowing owls are unlikely to nest on the Project site, there is a remote possibility that nesting may occur. Wintering owls in Santa Clara County often remain past February 1, at which time they cannot be distinguished from breeding birds. As a result, any owl present between February 1 and August 31 will be considered a potential breeder unless and until it leaves the site.

   Avoidance shall include establishment of a 250-foot non-disturbance buffer zone around nests. Construction may occur outside of the 250-foot non-disturbance buffer zone. Construction may occur inside of the 250-foot non-disturbance buffer during the breeding season only if the nest is not disturbed, and a qualified biologist retained by the Project Applicant develops an avoidance, minimization, and monitoring plan that is reviewed and approved by the CDFW prior to Project construction and meets all of the following criteria:

   - A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
   - The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.
   - If there is any change in owl nesting and foraging behavior as a result of construction activities, all disturbance activities shall cease within the 250-foot buffer. Construction shall not resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the Project area and 250-foot buffer.

- If monitoring indicates that the nest is abandoned prior to the end of the nesting season (as would occur if a wintering owl lingered past February 1 and then eventually migrated to its breeding areas outside the region), and the burrow is no longer in use by owls, the non-disturbance buffer zone may be removed. The qualified biologist will excavate the burrow to ensure that no owls are present and to prevent reoccupation after receiving approval from CDFW.

b. Avoidance during the Non-Breeding Season. During the non-breeding season (September 1 through January 31), a 250-foot non-disturbance buffer shall be established around occupied burrows as determined by a qualified biologist. Construction activities outside of this 250-foot buffer are allowed. Construction activities within the 250-foot buffer are allowed if all of the following criteria are met in order to prevent owls from abandoning important overwintering sites:

- A qualified biologist monitors the owls for at least three days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl nesting and foraging behavior as a result of construction activities, all disturbance activities shall cease within the 250-foot buffer.
- If the owls are gone for at least one week, the Project Applicant may request approval from the CDFW that a qualified biologist excavate usable burrows to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue. Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

c. Construction Monitoring. Based on the avoidance, minimization, and monitoring plan developed during construction, all non-disturbance buffer zones shall be established and maintained. A qualified biologist shall monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed. The biological monitor shall also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone or within 250 feet of such zone.

d. Passive Relocation. Passive relocation shall only be allowed, with the approval of CDFW, during the non-breeding season (September 1 through January 31), and may only occur if the burrow needs to be removed or could collapse from construction activities. If passive relocation is allowed by CDFW, a qualified biologist shall passively exclude birds from their burrows during non-breeding season only by installing one-way doors in burrow entrances. These doors shall be in place for at least 48 hours to ensure owls have left the burrow, and then the qualified biologist shall excavate the burrow to prevent reoccupation. Burrows shall be excavated using hand tools. During excavation an escape route shall be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having the overburden collapse into the burrow and trap owls inside.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-7 would ensure that individual burrowing owls are not injured or killed during Project construction and operation activities, and that burrows occupied by owls are not abandoned (through implementation of buffers) unless those burrows are within the Project footprint, in which case passive relocation of owls may be implemented with CDFW approval. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on burrowing owls and their habitats by training Project personnel on this species, its habitats, and measures necessary to avoid and minimize impacts. Implementation of these mitigation measures would reduce impacts on burrowing owls to less-than-significant levels. No compensatory mitigation for impacts to this species is necessary because the Project is highly unlikely to impact owls that are part of the South Bay breeding population, and there is no evidence that the availability of grassland habitat is limiting populations of the nonbreeding owls that occupy grasslands in southern Santa Clara County in winter.

Nevertheless, implementation of Mitigation Measure 3.4-4c and 3.4-5b for the CRLF and CTS, respectively, may benefit this species if the upland habitats provided as compensatory mitigation for those amphibian species are also suitable for burrowing owls. Because the Project has a limited (30-year) period in which mining would occur, and Project areas would be restored to natural habitat following completion of mining and reclamation, the mitigation measures, coupled with ultimate reclamation of the site, would ensure that burrowing owl populations are not reduced by the Project. Implementation of the mitigation measures could impact burrowing owls; for example, passive relocation of individuals could cause owls to move to areas where they may be more subject to predation or competition with other burrowing owls. However, the relatively low potential for such adverse effects is preferable to direct injury or mortality that might occur if owls were not passively relocated from burrows within Project impact areas.

Impact 3.4-8: Project activities would result in adverse effects on tricolored blackbirds and their habitat. (Less than Significant with Mitigation)

Tricolored blackbirds have not been recorded breeding in the Project area. This species was not observed on Sargent Ranch during several surveys conducted from 2000 to 2017, and it may not currently breed there. Nevertheless, there is a historical (1989) breeding record of the species on Sargent Ranch. A stock pond in the geotechnical setback area of Phase 2, a pond adjacent to the Phase 4 mining area, and a seep within the setback area of Phase 1 provide suitable nesting habitat, and this species can nest in extensive mustard, thistles, or other upland vegetation if suitable structure is present. Suitability of this species' nesting habitat can change dramatically at a site from one year to the next (e.g., grazing can degrade habitat, and removal of grazing can allow habitat to regenerate from one year to the next). Given the long duration for full Project implementation, tricolored blackbirds could occupy the site during the lifetime of the Project. The Project area also provides suitable foraging habitat for tricolored blackbirds.

Construction

Adult tricolored blackbirds would not be injured or killed by Project activities, as they could fly away from any construction equipment. Therefore, if tricolored blackbirds are absent from the Project site or use the site only for foraging, no injury or mortality would occur. However, if tricolored blackbirds are actively breeding in areas disturbed by Project construction, then eggs or nestlings could be lost as a result of vegetation removal or ground-disturbing activities during the breeding season (March 15 to July 31). Noise and movement of construction personnel, vehicles, and equipment in close proximity to (e.g., within 250 feet of) active nests could disturb breeding adults to the point of nest abandonment. Based on the lack of observations of this species during Project surveys, it is unlikely that nesting colonies would be destroyed or disturbed. However, this species nests in colonies that may number hundreds or even thousands of pairs, and therefore, if Project construction impacts a colony, large numbers of nests would be lost.

Construction would result in the loss of foraging habitat for tricolored blackbirds, as this species forages in a wide variety of habitats. Construction could also cause the loss of nesting habitat, although no construction activities are proposed to occur in areas that currently provide high-quality nesting habitat (i.e., emergent wetland vegetation), and the absence of detections of this species during Project surveys indicates that it is highly unlikely that any habitat used currently or recently for nesting would be impacted by the Project.

Impacts on tricolored blackbirds would not be reduced substantively by implementation of the conditions of permits and agency approvals. Although this species often nests in emergent vegetation that may be regulated by the USACE and RWQCB under the CWA or Porter-Cologne Water Quality Control Act, Project permits may allow impacts to such vegetation, and the conditions of those permits may not include measures to protect tricolored blackbirds. Any Lake and Streambed Alteration Agreement issued by CDFW may include measures to avoid impacts to tricolored blackbirds, but those conditions would apply only to creek and riparian habitats under CDFW jurisdiction, whereas tricolored blackbirds could nest in ponds or other areas not subject to CDFW's jurisdiction. Due to the potential for construction activities to result in disturbance of nesting colonies and the loss of nesting habitat, the impact of Project construction on tricolored blackbirds and their habitat would be **significant**.

Operation

Mining Pits

Operational activities could impact tricolored blackbirds in the same way as construction impacts. If nesting occurs in or near the mining areas, groundbreaking could result in the loss of active nests, eggs, and young, or disturbance of nesting colonies. Mining could also result in the loss of nesting habitat, such as a stock pond within the geotechnical setback area of Phase 2 and a seep within the setback area of Phase 1, and could potentially reduce habitat quality at a pond adjacent to the Phase 4 mining area due to reduction in the watershed draining to this pond. Mining would result in the loss of foraging habitat.

The Todd Groundwater memo and addendum suggested that emergent vegetation could establish in the bottoms of the mining pits (Todd Groundwater 2016, 2019). However, it is unlikely that sufficient emergent vegetation would accumulate in the pits to support nesting by tricolored blackbirds, as mining disturbance would minimize vegetation development until mining in a given pit is completed. Because reclamation would occur on an ongoing basis (as use of certain areas is completed), reclamation would prevent the establishment of large amounts of emergent vegetation after mining activities cease. Even if vegetation is present, mining disturbance within a pit would likely provide sufficient disturbance to discourage tricolored blackbirds from establishing a nesting colony. Therefore, there is a low probability that tricolored blackbirds would establish nesting colonies within the mining pits. However, if sufficient vegetation develops, and if mining activity does not prevent nesting (either because of a lull in activity during the breeding season or because mining is occurring far enough from the suitable habitat), then mining close to a colony after a colony becomes established could cause abandonment of active nests or could destroy active nests. Therefore, the impact of Project operations on tricolored blackbirds and their habitat would be **significant**.

Reclamation

Reclamation activities would involve use of construction equipment. Adult tricolored blackbirds would not be injured or killed by reclamation activities, as they could fly away from any construction equipment. Reclamation activities could result in the loss of active nests, eggs, and young, or disturbance of nesting colonies, if nesting is occurring in or near the areas being reclaimed. Following completion of mining, reclamation of the mining pits, and removal of the processing plant, habitat conditions would be similar to baseline conditions from the perspective of tricolored blackbird use. The impact of Project construction on tricolored blackbirds would be **significant**.

Summary

Considering construction and operational activities together, the Project would result in the disturbance of up to 361.5 acres of potential foraging and/or nesting habitat (i.e., all habitat types on the Project site except for developed and wooded habitats) for this species. However, suitable foraging habitat for this species is widespread in the South Bay; given the species' very scarce and localized status as a breeder in the South Bay, suitable foraging habitat is not limiting this species' distribution. Therefore, if tricolored blackbirds only use the Project area for foraging (or not at all), the Project would not result in a significant impact on this species. However, if the species breeds on the Project site, the Project could cause the loss of active nests, eggs, and young, and the Project could result in the loss of breeding habitat. Therefore, Project construction and operational impacts on the tricolored blackbird are considered **significant**.

Mitigation Measure 3.4-8a: The Applicant shall implement the following measures (based on those contained within Condition 17 of the VHP) prior to groundbreaking activities for each phase of the Project (construction, operations, and reclamation), to ensure that active tricolored blackbird colonies, including active nests, eggs, and young, are not lost as a result of Project activities.

1. Prior to the initiation of any ground disturbance, vegetation removal, or other activities involving habitat impacts or movement of Project personnel, vehicles, or heavy equipment for construction or for the start of mining activities associated with each new mining phase that occur between March 15 and July 31, a qualified biologist retained by the Applicant shall conduct preconstruction surveys in all suitable tricolored blackbird habitat areas on and within 250 feet of the area in which construction or operational activities are proposed. The survey will be conducted no more than two calendar days prior to the start of the construction or operational activity. To avoid last minute changes in schedule that may occur if an active nest

(i.e., a nest that is under construction or contains eggs or young) is found, the Project Applicant may also conduct a preliminary survey more than two calendar days before the start of construction, operations, and reclamation activities.

2. If any emergent vegetation develops in the bottom of an active mining pit (i.e., one that has not yet undergone complete reclamation), and more than one week of inactivity within 250 feet of that emergent vegetation occurs during the breeding season (March 15-July 31), a qualified biologist shall perform a survey for nesting tricolored blackbirds prior to the initiation of any subsequent Project activity within 250 feet of the emergent vegetation.

3. If a tricolored blackbird nesting colony is present, the qualified biologist will map the extent of suitable nesting habitat in which nesting is taking place (this suitable habitat may extend beyond the locations of actual nests). A 250-foot buffer will be applied between the edge of that nesting habitat and Project activities. This buffer may be reduced in areas with dense forest or other habitat features between the construction activities and the active nest colony, or where there is sufficient topographic relief to protect the colony from excessive noise or visual disturbance. Depending on site characteristics, the sensitivity of the colony, and surrounding land uses, the buffer zone may also be increased beyond 250 feet.

4. If construction or operational activities take place during the breeding season when an active colony is present, a qualified biologist will monitor these activities to ensure that the 250-foot buffer zone is enforced. If monitoring indicates that Project activities outside of the buffer are affecting a breeding colony, the buffer will be increased if space allows (e.g., moving work areas farther away). If space does not allow, the Project activities causing disturbance of the colony will cease until the young have fledged or until the end of the breeding season, whichever occurs first. The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that tricolored blackbirds fly into an active construction zone (i.e., outside the buffer zone).

Mitigation Measure 3.4-8b: If Project construction or operational activities will result in direct impacts (outside the breeding season) on nesting habitat known to have supported nesting tricolored blackbirds within the last five years (as identified in the CNDDB, through contact with local experts, and Project pre-activity surveys in Mitigation Measure 3.4-8a), compensatory mitigation for the loss of nesting habitat shall be provided. Prior to initiation of impacts on that nesting habitat, a qualified biologist will determine the acreage of nesting habitat (habitat used by nesting blackbirds in the previous five years) that will be impacted. Compensatory mitigation will be provided in the form of habitat preservation or creation at a ratio of 1:1 (on an acreage basis) and shall be described within the Project's HMMP prepared for the CRLF and CTS as described in Mitigation Measures 3.4-4c and 3.4-5b. First priority for compensatory mitigation sites shall be areas located on Sargent Ranch. Off-site mitigation shall only be used if on-site mitigation cannot fully compensate for habitat losses.

Habitat to be preserved or created shall contain at least the same acreage of suitable nesting habitat for the tricolored blackbird as the amount of nesting habitat acreage lost, and the suitability of that habitat for nesting must be verified by a qualified biologist and reviewed and approved by the County Department of Planning and Development. A habitat protection easement ensuring that the use and development of the compensatory mitigation area shall be consistent with this purpose in perpetuity shall be granted by the Applicant to the County or other qualified entity approved by the County.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-8a would ensure that Project construction and operational activities do not cause the direct or indirect loss of active nests, eggs, or young, and Mitigation Measure 3.4-8b will compensate for any loss of nesting habitat known to have supported nesting tricolored blackbirds within the last five years. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on tricolored blackbirds and their habitats by training Project personnel on this species, its habitats, and measures necessary to avoid and minimize impacts. Implementation of these mitigation measures would reduce impacts on tricolored blackbirds to less-than-significant levels. Because the Project has a limited (30-year) period in which mining will occur, and Project areas will be restored to natural habitat following completion of mining and reclamation, the mitigation measures, coupled with reclamation of the site, will ensure that this species' populations are not reduced by the Project.

Impact 3.4-9: Project activities would result in adverse effects on other special-status and protected birds and their habitat. (Less than Significant with Mitigation)

The Project site provides potential foraging and nesting habitat for several special-status bird species, including the grasshopper sparrow, Bryant's savannah sparrow, yellow warbler, loggerhead shrike, white-tailed kite, and northern harrier, and all these species could breed on the Project site in low numbers. The site also provides suitable foraging habitat for several other special-status bird species, including the bald eagle, golden eagle, peregrine falcon, short-eared owl, long-eared owl, and bank swallow; however, these species would not nest on or very close to the Project site due to the absence of high-quality nesting habitat and nest sites. In addition, a diverse array of other native bird species, all protected by the Migratory Bird Treaty Act and California Fish and Game Code, nest in the grasslands, oak woodlands, riparian habitats, and other habitat types present on the Project site.

Construction

Adult birds and fledged juveniles/subadults would not be injured or killed by Project activities, as they could fly away from any construction equipment. However, construction during the nesting season (generally February 1 to August 31) could result in the loss of active nests, including eggs or young, during vegetation removal, grading, or construction in nesting habitat. Noise and movement of construction personnel, vehicles, and equipment in close proximity to active nests could disturb breeding adults to the point of nest abandonment. Construction would also result in the loss of nesting, foraging, and roosting habitat for protected birds. All of the natural habitats on the Project site (i.e., all except "developed") provide suitable nesting, foraging, and/or roosting habitat for at least one special-status bird species, and therefore such impacts could occur virtually anywhere on the Project site.

Impacts on nesting, roosting, and foraging habitat for special-status birds and other protected birds would be reduced by implementation of the conditions of permits and approvals. Conditions of the permits necessary to construct the bridges and to impact wetland, creek, and riparian habitats during mining activities (from the USACE under Section 404 of the CWA, the RWQCB under Section 401 of the CWA and/or the Porter-Cologne Water Quality Control Act, and the CDFW under Section 1600 of the California Fish and Game Code) would include conditions requiring the implementation of measures to avoid and minimize impacts to water quality and wetland and aquatic habitats. Further, CDFW's Lake and Streambed Alteration Agreements often include measures to avoid impacts to nesting birds. Implementation of the conditions in these permits would reduce impacts on protected birds and their habitats. Nevertheless, because construction activities away from regulated habitats would not be subject to nesting bird conditions of resource agency permits, construction has the potential to cause the loss or disturbance of active nests and the loss of their habitat. Therefore, the impact of Project construction on other special-status and protected birds and their habitat would be **significant**.

Operation

Operational activities could adversely affect protected birds in the same ways as described above for construction activities. Operational activities could also result in the loss or degradation of habitat off-site as a result of changes in hydrology due to mining, as described in greater detail in Impact 3.4-14 for riparian habitats. Therefore, the impact of Project operations on other special-status and protected birds and their habitat would be **significant**.

Reclamation

Reclamation activities would involve use of construction equipment. However, adult protected birds would not be injured or killed by reclamation activities, as they could fly away from any construction equipment. Reclamation activities could result in the loss of active nests, eggs, and young, or disturbance of nesting colonies, if nesting is occurring in or near the areas being reclaimed. Following completion of mining, reclamation of the mining pits, and removal of the processing plant, habitat conditions would be similar to baseline conditions from the perspective of use by protected birds, although the removal of trees in coast live oak forest and woodland and mixed riparian woodland and forest habitats (see Figures 3.4-1 and 3.4-2) would result in some long-term loss of nesting and roosting habitat. The impact of Project reclamation on other special-status and protected birds would be **significant**.

Summary

Considering construction and operational activities together, the Project would result in the disturbance of up to approximately 403.29 acres of suitable habitat (i.e., all habitat types on the Project site except for developed habitats) for protected birds. None of the special-status bird species nesting in or near the Project area (grasshopper sparrow, Bryant's savannah sparrow, yellow warbler, loggerhead shrike, white-tailed kite, and northern harrier) are listed under FESA or CESA. Furthermore, these species are widespread in the region, and none are particularly rare. However, the significance threshold for habitat modification of special-status species is any measurable alteration of the habitat that would result in a drop in the population of the species. In addition, all native bird species occurring on the Project site are protected by state and federal law, and due to the high diversity of both special-status and non-special-status birds that occur on the site, Project impacts that result in the loss of active nests could result in substantial degradation of bird communities in the Sargent Ranch area as a whole. Therefore, the impact of Project construction, operations, and reclamation on special-status and protected birds and their habitat would be **significant**.

Mitigation Measure 3.4-9: The Applicant shall implement the following measures prior to any ground disturbance, vegetation removal, or other activities involving habitat impacts or movement of Project personnel, vehicles, or heavy equipment for construction, for the start of mining activities associated with each new mining phase, and for the start of reclamation activities to ensure that active nests, eggs, and young of protected birds are not lost as a result of Project activities.

a. To the extent feasible, construction, operational, and reclamation activities that involve vegetation removal or ground-breaking, or that occur near wooded or forested habitats likely to support large numbers of nesting birds, shall be initiated during the nonbreeding season for birds (generally September 1 through January 31). If these activities are scheduled to take place outside the nesting season, impacts on active nests of birds protected under the MBTA and California Fish and Game Code will be avoided.

b. Prior to the initiation of any ground disturbance, vegetation removal, or other activities involving habitat impacts or movement of Project personnel, vehicles, or heavy equipment for Project activities that occur between February 1 and August 31, a qualified biologist retained by the Applicant shall conduct preconstruction surveys for nesting birds. The survey will cover the portions of the Project site where construction/operations activities will be initiated as well as a 1-mile buffer for nesting eagles (in the event that eagles may nest in the vicinity during the Project's lifetime), a 250-foot buffer for other raptors, and a 100-foot buffer for non-raptors (other than tricolored blackbirds, which are addressed in Mitigation Measures 3.4-8a and 8b). During each survey, the qualified biologist will inspect all potential nesting habitats (e.g., trees, shrubs, grasslands, wetlands, and other nesting substrate) within direct impact areas and the aforementioned buffers for active nests (i.e., nests with eggs or young). The survey will be conducted no more than two calendar days prior to the start of the construction or operational activity. To avoid last-minute changes in schedule that may occur if an active nest is found, the Project Applicant may also conduct a preliminary survey more than two calendar days before construction.

c. If an active nest is found, a qualified biologist will determine the extent of a disturbance-free buffer zone to be established around the nest to ensure that it is not disturbed during Project implementation. The buffer distance is measured as the straight-line distance between an active nest and the activity. No Project-related activities that could physically disturb the nest, or any new Project-related activities (i.e., activities that were not ongoing when the nest was established) near the nest, will be performed within the buffer until the young have fledged or the nest has been determined to be inactive by a qualified biologist. Standard buffers are typically 100 feet for non-raptors and 250 feet for raptors other than eagles (for which the buffer may be up to 1 mile). A qualified biologist may determine that a reduced buffer is acceptable, taking into account dense vegetation, topography, or structures that will block Project activities from view; the life history and behavior of the bird species in question; and the nature (such as amount of noise, ground disturbance, or activity of personnel and equipment) of the proposed activity. If a reduced buffer is implemented, the qualified biologist will monitor bird behavior during work activities to the degree necessary to determine whether the buffer should be increase.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-9 would ensure that active nests of protected birds are not directly impacted or disturbed to the point of abandonment as a result of Project activities. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on protected birds and their habitats by training Project personnel on these species, their habitats, and measures necessary to avoid and minimize impacts. Implementation of this mitigation measure would reduce impacts protected birds to less-than-significant levels. No compensatory mitigation for impacts to these species is necessary because the Project would not result in substantial impacts to regional populations with implementation of Mitigation Measure 3.4-9.

In addition, implementation of Mitigation Measure 3.4-4c and 3.4-5b for the CRLF and CTS, respectively, would benefit numerous bird species, likely including most or all of the special-status bird species that nest on the Project site, given that the upland habitats provided as compensatory mitigation for those amphibian species would also provide suitable habitat for a number of bird species. Because the Project has a limited (30-year) period in which mining would occur, and Project areas would be restored to natural habitat following completion of mining and reclamation, the mitigation measure, coupled with ultimate reclamation of the site, would ensure that populations of protected birds are not reduced by the Project.

Impact 3.4-10: Project activities would result in adverse effects on special-status bats. (Less than Significant with Mitigation)

Two special-status bat species could roost in the Project area: the pallid bat and western red bat, both of which are California species of special concern. They are strongly associated with intact cottonwood/sycamore valley riparian habitats and they roost solitarily in foliage. Structures such as barns that provide high-quality roosting habitat for pallid bats are not present in the Project area, but this species could roost (and females could form maternity roosts) in trees such as oaks that provide large cavities.

Construction

Maternity roosts of western red bat would not be affected by construction activities because the species does not breed in Santa Clara County. However, nonbreeding roosts of western red bat may be impacted by Project construction. In the event that a tree is removed while it is being used for roosting by a red bat (e.g., during riparian tree removal for construction of the bridge over Tar Creek), the individual would be able to flee before it is injured or killed. Although these individuals may be subjected to increased risk of predation during the daytime, few, if any, western red bats would be present in areas where they would be disturbed by proposed Project activities.

Oak trees provide potential habitat for the cavity-roosting pallid bat. When trees containing roosting colonies or individual pallid bats are removed or modified, individual bats could be physically injured or killed; subjected to physiological stress from being disturbed during torpor; or face increased predation because of exposure during daylight. Construction during the maternity season (April 1 to July 31) near maternity roosts may cause mothers to attempt to relocate to new roosts. Some females may find alternative roosts in other hollows in trees, or crevices in rock outcrops nearby. If females are forced to abandon a roost early in the maternity season (e.g., in April or May), their young may be small enough that the females can carry the young to a new roost. However, if females leave the roost later in the maternity season (e.g., June or July), the young may be too large to carry, and abandonment of young or unsuccessful attempts to relocate young could lead to their mortality.

Project construction would result in the loss of trees in coast live oak forest and woodland and mixed riparian woodland and forest as shown in Figures 3.4-1 and 3.4-2. These areas may serve as roost sites for both western red bats and pallid bats. Further, Project construction would result in the loss of vegetated foraging habitat for the pallid bat, which often picks prey off the ground in open habitats such as grassland. If pallid bats abandon a roost during construction, but the tree containing the roost is not removed, they may return to the roost once construction has been completed. However, unless high-quality alternative roost sites are present in the vicinity, the population may decline before the bats can re-occupy the roost due to permanent dispersal of females away from the roost, lower reproductive success by females using inferior roost sites (such as roosts located farther from high-quality foraging habitat), or predation of bats that are unable to find suitable roost sites. Loss of vegetation may also reduce prey abundance and availability for foraging bats.

Impacts on bat roosting and foraging habitat may be reduced to a limited extent by implementation of the conditions of permits and approvals. Conditions of the permits necessary to construct the bridges and to impact wetland, creek, and riparian habitats during mining activities (from the USACE under Section 404 of the CWA, the RWQCB under Section 401 of the CWA and/or the Porter-Cologne Water Quality Control Act, and the CDFW under Section 1600 of the California Fish and Game Code) would include conditions requiring the implementation of measures to avoid and minimize impacts to riparian habitats. Further, CDFW’s Lake and Streambed Alteration Agreements often include measures to avoid impacts to roosting bats. Implementation of the conditions in these permits would reduce impacts on special-status bats and their habitats. Nevertheless, because construction activities away from regulated habitats would not be subject to roosting bat conditions of resource agency permits, construction has the potential to cause the loss or disturbance of roosting bats and the loss of their habitat. Therefore, the impact of Project construction on special-status bats and their habitat would be **significant**.

Operation

Operational activities could affect western red bats and pallid bats in the same ways described for construction activities. Removal of oak woodland within Phases 1 and 2 for mining would be most likely to impact roosting bats. Use of lighting in close proximity to occupied roosts could disturb bats, causing them to abandon the roost. Operational activities could also result in the loss or degradation of habitat off-site as a result of changes in hydrology due to mining, as described in greater detail in Impact 3.4-14 for riparian habitats. However, such changes in riparian habitat would not result in substantial impacts to western red bats, which are scarce in the Project area/vicinity and would therefore have ample roost sites available to them, or to pallid bats, which would continue to use suitable cavities of riparian trees even if those trees are stressed by changes in hydrology. The impact of Project operations on special-status bats and their habitat would be **significant**.

Reclamation

Reclamation would not involve tree removal and therefore would not affect roosting activities by special-status bats. Following completion of mining, reclamation of the mining pits, and removal of the processing plant, foraging habitat conditions would be similar to baseline conditions from the perspective of bat use, though the removal of trees would result in some long-term loss of potential roosting habitat. Therefore, the impact of Project construction on special-status bats and their habitat would be **less than significant**.

Summary

All impacted riparian and oak woodland habitat provides suitable roost sites for western red bats, and a subset of such habitat (mature trees with large cavities) provides suitable roosting habitat for pallid bats. Considering construction and operational activities together, the Project would result in the disturbance or loss of up to 40.4 acres of potential roosting habitat for these two special-status bats, as well as the loss of up to 337.3 acres of grassland that provides suitable foraging habitat for pallid bats. The western red bat occurs in the region only in low densities, and only as a nonbreeder; as a result, suitable roosting habitat for this species is widespread, and the Project site supports only a very small proportion of regionally available habitat for this species. However, the significance threshold for habitat modification of special-status species is any alteration of the habitat that would result in a drop in the population of the species. Moreover, pallid bats are scarce and localized species in the region, and if construction or operational activities were to cause the loss or abandonment of an actively used maternity roost site for this species, or in the destruction of an occupied maternity roost (resulting in injury or mortality of individual pallid bats), such an impact could cause a decline in the population of the species. Therefore, the impact of Project construction and operations on special-status bats would be **significant**.

> **Mitigation Measure 3.4-10a:** The Applicant shall implement the following measures prior to any ground disturbance, vegetation removal, or other activities involving habitat impacts or movement of Project personnel, vehicles, or heavy equipment for construction or for the start of mining activities associated with each new mining phase to ensure that active pallid bat maternity roosts are not destroyed or disturbed as a result of Project activities.
>
> 1. A qualified biologist retained by the Applicant shall conduct a habitat assessment of any riparian or oak woodland within the Project area for high-quality pallid bat roost sites prior to the start of any activities that will result in the removal of trees, use of heavy equipment, or night lighting. The habitat assessment shall include all impact areas plus a surrounding 150-foot buffer. If the habitat assessment concludes that any trees proposed for removal, or within 150 feet of areas where heavy equipment will

be operated or night lighting will occur, provide high-quality roosting habitat for pallid bats (e.g., large cavities), the qualified biologist shall conduct a focused emergence survey to determine whether the roost is occupied. The survey shall be performed within 15 days prior to the start of construction or operations activities in a given Project phase. The survey shall include monitoring of suitable cavities at dusk, on a warm, dry evening when bats would emerge, to determine whether bats exit the roosts. Surveys may necessitate multiple qualified biologists and the use of acoustic detection devices to ensure that any pallid bats present are detected. If no pallid bats are detected emerging during the survey, no further measures are necessary. If pallid bats are detected during the survey, the qualified biologist will identify an appropriate buffer to be maintained around the roost during the maternity season (April 1 through July 31). The dimensions of the buffer will be determined based on the nature of the construction or operational activities proposed near the roost tree, the presence of dense vegetation or topography between the Project activities and the roost, and any other relevant factors. No new activities (i.e., activities that were not ongoing when the maternity season began) will occur within the buffer around the roost tree during the maternity season.

2. Pallid bat roost sites will be avoided and buffered, even outside the maternity season, if feasible. If it is infeasible to avoid the removal of a roost tree, whenever feasible the tree shall be removed only outside the maternity roost season and during seasonal periods of bat activity, when bats would be best able to find alternative roost sites. Thus, whenever feasible tree removal would occur only August 1 through October 15 or during March. Removal of these trees shall occur under the supervision of a qualified biologist via a two-phased process over two consecutive days. In the afternoon of the first day, limbs and branches shall be removed by a tree cutter using chainsaws only. Limbs with cavities, crevices, or deep bark fissures shall be avoided, and only branches or limbs without those features shall be removed. This disturbance would cause bats to leave the roost that evening. On the second day, the entire tree shall be removed.

Mitigation Measure 3.4-10b: If a tree (or any other structure) containing a pallid bat maternity roost must be removed as part of the Project, a qualified biologist shall design and determine an appropriate location, on Sargent Ranch, for an alternative roost structure, based on the location of the original roost and habitat conditions in the vicinity. The roost structure shall be built to specifications as determined by a qualified biologist, or it may be purchased from an appropriate vendor, though the design must be approved by a qualified biologist. The structure shall be placed as close to the impacted roost site as feasible, though it will be located far enough from future Project activities so as to avoid disturbance of bats using the roost. The Applicant shall monitor the roost for three years or until occupancy is determined (whichever occurs first) to determine use by bats and submit annual reports verifying monitoring results to the County Department of Planning and Development Department.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-4b would reduce impacts to roosting bats by reducing lighting effects. Mitigation Measure 3.4-10a would ensure that pallid bats are not injured or killed during tree removal, and that occupied pallid bat maternity roosts are not disturbed to the point of abandonment during the maternity season. Mitigation Measure 3.4-10b would require replacement of any pallid bat maternity roosts that are impacted by the Project. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on bats and their habitats by training Project personnel on these species, their habitats, and measures necessary to avoid and minimize impacts. These measures collectively minimize the potential for the loss of individual pallid bats and offset the loss of maternity roost sites.

In addition, implementation of Mitigation Measure 3.4-4c and 3.4-5b for the CRLF and CTS, respectively, would likely benefit both the western red bat and pallid bat by preserving and managing upland habitat that could be used by both bat species. Because the Project has a limited (30-year) period in which mining would occur, and Project areas would be restored to natural habitat following completion of mining and reclamation, the mitigation measures, coupled with ultimate reclamation of the site, would ensure that populations of special-status bats are not reduced by the Project. Implementation of mitigation measures could result in impacts to bats, as bats that are encouraged to leave their roosts could be subject to increased predation risk or reduced reproductive success if they are unable to easily find alternative roosts. However, the net effects of mitigation measures would be preferable to having bats injured or killed during tree removal.

Impact 3.4-11: Project activities would result in adverse effects on mountain lions and their habitat. (Less than Significant with Mitigation)

A mountain lion was observed on Sargent Ranch in 2004, and the species could occur there regularly. The Project area may be a part of a regular mountain lion territory, in which case the species may forage throughout the Project area, and dispersing individuals also likely occur within the Project area. Individuals typically have a large home range, ranging from 25 to 500 square miles in males and 8 to 400 square miles in females. As a result, the Project area would at most serve as a very small portion of an individual’s home range.

Construction

Project construction would not result in direct injury or mortality of mountain lions. The majority of the Project area is occupied by open grassland, which would not be used as denning habitat by the mountain lion, which uses dens that are well concealed. The riparian habitat along Tar Creek near the proposed bridge crossing is very close to an occupied residence with dogs, which would be avoided by mountain lions, and even the oak woodland is open enough that mountain lions are not expected to establish dens there. As a result, mountain lions would occur in construction areas only when foraging or during dispersal. Construction activity may disturb foraging or dispersing mountain lions, causing them to move away from or to avoid Project areas that are under construction. If construction activities cause dispersing mountain lions to move across U.S. 101 over the road surface instead of using undercrossings, then the Project could indirectly cause injury or mortality of individuals due to vehicle collisions. Effects of the Project on movement of wildlife, including mountain lions, are discussed in detail in Impact 3.4-15. Construction would result in the loss of foraging habitat for mountain lions.

Conditions of the permits necessary to construct the bridges and to impact wetland, creek, and riparian habitats during mining activities (from the USACE under Section 404 of the CWA, the

RWQCB under Section 401 of the CWA and/or the Porter-Cologne Water Quality Control Act, and the CDFW under Section 1600 of the California Fish and Game Code) could reduce impacts on riparian habitats that provide cover for mountain lions. However, because the majority of mountain lion activity in the Project area would occur in upland habitats that are not subject to resource agency permits, impacts on mountain lions are unlikely to be reduced substantially by implementation of the conditions of permits and approvals. Therefore, the impact of Project construction on mountain lions and their habitat would be **significant**.

Operation

As discussed for construction activities, Project operations would not result in direct injury or mortality of mountain lions. However, operational activities would create enough disturbance that mountain lions may avoid the Project area, at least during the hours of operation (4:30 a.m. to 5:00 p.m., Monday through Saturday). Operational activities could also deter mountain lions from using certain undercrossings, such as the Tar Creek/UPRR undercrossing of U.S. 101, which could cause individuals to cross over the highway (which could result in injury or mortality) or inhibit dispersal. Effects of the Project on movement of wildlife, including mountain lions, are discussed in detail in Impact 3.4-15. Operational activities, primarily mining, would result in the loss of foraging habitat for mountain lions. Therefore, the impact of Project operations on special-status bats and their habitat would be **significant**.

Reclamation

As discussed for construction activities, reclamation would not result in direct injury or mortality of mountain lions. Following completion of mining, reclamation of the mining pits, and removal of the processing plant, habitat conditions would be similar to baseline conditions from the perspective of mountain lion use. Therefore, the impact of Project reclamation on special-status bats and their habitat would be **less than significant**.

Summary

All impacted natural habitat (i.e., all areas that are not currently developed) would be considered suitable mountain lion foraging and dispersal habitat. Considering construction and operational activities together, the Project would result in the disturbance or loss of up to approximately 403.29 acres of suitable habitat for this species. The significance threshold for habitat modification is any measurable alteration of the habitat that would result in a drop in the population of special-status species. The significance threshold for endangered or threatened animals such as the mountain lion is any loss of individual animals. Although no direct loss of individuals would result from Project activities, Project construction and operation could cause dispersing animals to cross over U.S. 101 instead of using undercrossings such as the Tar Creek/UPRR undercrossing. Other impacts of the Project on mountain lion dispersal are discussed in detail in Impact 3.4-15, and Mitigation Measure 3.4-15, discussed in the wildlife movement impact section below, would be implemented to reduce impacts on mountain lions. The impact of Project construction and operations on mountain lions and their habitat would be **significant**.

Mitigation Measure 3.4-11: The Applicant shall implement Mitigation Measures 3.4-4c, 3.4-5b, and 3.4-15.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-15, discussed in the wildlife movement impact section, would reduce impacts on mountain lion movement. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on mountain lions and their habitats by training Project personnel on this species, its habitats, and measures necessary to avoid and minimize impacts. In addition, implementation of Mitigation Measure 3.4-4c and 3.4-5b for the CRLF and CTS, respectively, would likely benefit mountain lions by preserving and managing habitat that could be used by mountain lions. Because the Project has a limited (30-year) period in which mining would occur, and Project areas would be restored to natural habitat following completion of mining and reclamation, the mitigation measures, coupled with ultimate reclamation of the site, would minimize the potential for populations of mountain lions to be reduced by the Project (though see Impact 3.4-15 for the significance of Project impacts on wildlife movement).

Impact 3.4-12: Project activities would result in adverse effects on San Francisco dusky-footed woodrats and their habitat. (Less than Significant with Mitigation)

San Francisco dusky-footed woodrat nests were observed within the Tar Creek riparian corridor where the free-span bridge is proposed during surveys in 2017 (Appendix E.3). This species occurs within the Project area in riparian woodland and possibly also in oak woodland.

Construction

Construction activities could result in injury or mortality of woodrats where dense riparian vegetation or oak woodland would be impacted, such as where the Tar Creek bridge would be constructed. In such areas, nests could be destroyed by heavy equipment during vegetation removal and grading. Though most adults would be able to flee the nests before they are injured or killed, some may be lost during vegetation removal and grading, and young in the nests would likely be lost as well. Substrate vibrations may also cause individuals to move out of refugia, exposing them to a greater risk of predation. Increases in human concentration and activity in the vicinity of suitable habitat may result in an increase in native and non-native predators that would be attracted to trash left at the work site and that could prey opportunistically on woodrats. Construction would cause the loss of suitable habitat for this species as well.

Impacts on woodrats and their habitat may be reduced by implementation of the conditions of permits and approvals. Condition of the permits necessary to construct the bridges and to impact wetland, creek, and riparian habitats during mining activities (from the USACE under Section 404 of the CWA, the RWQCB under Section 401 of the CWA and/or the Porter-Cologne Water Quality Control Act, and the CDFW under Section 1600 of the California Fish and Game Code) would include conditions requiring the implementation of measures to avoid and minimize impacts to riparian habitats, and CDFW's Lake and Streambed Alteration Agreements often include measures to minimize impacts to woodrat nests. Implementation of the conditions in these permits would reduce impacts on woodrats and their habitats to some extent. The San Francisco dusky-footed woodrat is not listed under FESA or CESA. Nevertheless, because construction activities away from regulated habitats would not be subject to woodrat conditions of resource agency permits, construction has the potential to cause the loss or disturbance of woodrat nests and the loss of the species' habitat. The impact of Project construction would be **significant**.

Operation

Mining operations could impact woodrats in the ways described above for construction activities where the species is present in oak woodland that would be cleared for mining. Woodrat nests in oak woodland could be present both on the ground (in areas with dense understory) and in arboreal tree nests. Use of lighting in close proximity to occupied woodrat habitat could make woodrats more detectable by nocturnal predators, increasing mortality. Operational activities could also result in the loss or degradation of riparian habitat along Sargent Creek downstream from the Project site as a result of changes in hydrology due to mining, as described in greater detail in Impact 3.4-14 for riparian habitats. The impact of Project operations would be **significant**.

Reclamation

Reclamation activities would not involve vegetation removal and therefore would not affect woodrat nests. Following completion of mining, reclamation of the mining pits, and removal of the processing plant, foraging habitat conditions would be similar to baseline conditions from the perspective of woodrat use. The impact of Project reclamation would be **less than significant**.

Summary

All riparian and oak woodland habitat on the Project site provides potential nesting and foraging habitat for San Francisco dusky-footed woodrats. Considering construction and operational activities together, the Project would result in the disturbance or loss of up to 40.4 acres of potential habitat for this species. In addition, woodrats could be injured or killed by construction and operational activities that affect riparian and oak woodland habitats. Also, woodrats are very important ecologically in that they provide an important prey source for predatory animals like raptors (particularly owls) and their nests also provide habitat for a wide variety of small mammals, reptiles, and amphibians. As a result, loss of woodrats could have adverse effects on a variety of other wildlife species. Impacts on woodrats and their habitat may be reduced by implementation of the conditions of permits and approvals. However, resource agency permits and approvals have not yet been issued and the conditions of those permits are not yet known with certainty, and those permits would not pertain to upland habitats such as oak woodland that could support nesting woodrats. Therefore, the impact of Project construction and operations on San Francisco dusky-footed woodrats and their habitat would be **significant**.

> **Mitigation Measure 3.4-12a:** The Applicant shall implement Mitigation Measure 3.4-4b.

> **Mitigation Measure 3.4-12b:** The Applicant shall implement the following measures prior to any ground disturbance, vegetation removal, or other activities in riparian or oak woodland for construction or for the start of mining activities associated with each new

mining phase to ensure that impacts to active nests of woodrats as a result of Project activities are minimized.

No more than 15 days prior to initial vegetation removal or ground disturbance within suitable habitat for the San Francisco dusky-footed woodrat, for each phase of construction and mining, a preconstruction survey for woodrat nests shall be conducted by a qualified biologist retained by the Applicant. The survey shall consist of walking through all areas of suitable habitat within the Project work area looking for woodrat nests, both on the ground and in oak trees.

a. All woodrat nests detected within the survey area shall be flagged and mapped.

b. A minimum 10-foot buffer should be maintained between Project construction activities and each nest to avoid disturbance. A smaller buffer may be allowed if, in the opinion of a qualified biologist, removing the nest would be a greater impact than that due to Project activities.

c. If avoidance of active woodrat nests is not feasible (e.g., the nest is in the Project disturbance area) the woodrats shall be evicted from their nests prior to the removal of the nests and onset of ground-disturbing activities to avoid injury or mortality of the woodrats. The eviction of woodrats and dismantling of woodrat nests shall begin no earlier than one hour before sunset to allow woodrats to escape under cover of dusk and avoid predators. A qualified biologist shall disturb the woodrat nest to the degree that all woodrats leave the nest and seek refuge outside of the Project activity area. Subsequently, the nest sticks shall be relocated; these materials will be gathered onto a tarp and then piled at the base of a nearby tree or shrub outside of the activity's impact area. The spacing between relocated nests shall not be less than 20 feet, if feasible, to avoid over-crowding.

d. If, during dismantling of a woodrat nest, young woodrats are detected, the nest will be left in place. Qualified biologists will revisit the nest after 3 days to determine whether it is still active, or whether the mother relocated the young to another area. Once the nest is determined to be inactive or the young are large enough to disperse on their own, the nest will be dismantled and the nest materials relocated.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-4b would reduce impacts to San Francisco dusky-footed woodrats by reducing lighting effects. Mitigation Measure 3.4-12b would minimize mortality of individual woodrats by avoiding impacts to occupied nests where feasible and allowing woodrats to flee from nests before the nests are destroyed. This mitigation measure would also facilitate reconstruction of nests by moving nest materials to suitable habitat areas outside the impact footprint. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on woodrats and their habitats by training Project personnel on this species, its habitats, and measures necessary to avoid and minimize impacts. These measures collectively minimize the number of woodrats that might be lost as a result of Project activities.

In addition, implementation of Mitigation Measures 3.4-4c and 3.4-5b for the CRLF and CTS, respectively, would likely benefit this species by preserving and managing woodland habitat that could be used by this species. The mitigation measures would ensure that populations of San Francisco dusky-footed woodrats are not reduced by the

Project. Implementation of mitigation measures would result in impacts to woodrats, as individuals that are encouraged to leave their nests could be subject to increased predation risk or reduced reproductive success if they are unable to easily find or construct alternative nests. However, many woodrats would be able to successfully find alternative refugia after eviction from their nests, and the net effects of mitigation measures would be preferable to having woodrats directly injured or killed during Project activities and would reduce impacts to less-than-significant levels.

Impact 3.4-13: Project activities would result in adverse effects on American badgers and their habitat. (Less than Significant with Mitigation)

American badgers have been documented on the greater Sargent Ranch property. While badgers and their dens have not been documented within the Project area, grasslands occurring in the Project area provide suitable foraging, denning, and breeding habitat for this species.

Construction

If American badgers are present in areas disturbed by Project construction, they could be injured or killed by heavy equipment if occupied dens are destroyed or compacted. Construction activities such as grading or movement of construction personnel or heavy equipment in close proximity to an occupied den could disturb badgers to the point of abandoning the burrow. This could result in the loss of an active den, forcing the individual to relocate. If a maternity den is physically destroyed or disturbed by the noise or movement of construction personnel or equipment, young could be lost or abandoned. Increases in human concentration and activity in the vicinity of suitable habitat may result in an increase in native and non-native predators that would be attracted to trash left at the work site and that could prey on or compete with badgers. Construction would also result in the loss of foraging and roosting habitat for this species.

Construction activity may disturb foraging or dispersing badgers, causing them to move away from or to avoid Project areas that are under construction. If construction activities cause dispersing badgers to move across U.S. 101 over the road surface instead of using undercrossings, then the Project could indirectly cause injury or mortality of individuals due to vehicle collisions. Effects of the Project on movement of wildlife, including badgers, are discussed in detail in Impact 3.4-16.

Impacts on American badgers would not be reduced appreciably by implementation of the conditions of permits and agency approvals, as this species occurs primarily in upland grasslands where conditions of CWA, Porter-Cologne Water Quality Control Act, and California Fish and Game Code permits would not apply. This species is not listed under FESA or CESA, but it is a regionally scarce species. The impact of Project construction would be **significant**.

Operation

Operational activities could impact badgers in the same ways described above for construction activities. Operational activities would create enough disturbance that badgers may avoid the

Project area, at least during the hours of operation (4:30 a.m. to 5:00 p.m., Monday through Saturday). Operational activities could also deter badgers from using certain undercrossings, such as the Tar Creek/UPRR undercrossing, of U.S. 101, which could cause individuals to cross over the highway (which could result in injury or mortality) or inhibit dispersal. Effects of the Project on movement of wildlife, including badgers, are discussed in detail in Impact 3.4-16. Operational activities, primarily mining, would result in the loss of foraging and denning habitat for badgers. Following completion of mining, reclamation of the mining pits, and removal of the processing plant, habitat conditions would be similar to baseline conditions from the perspective of badger use. The impact of Project operations would be **significant**.

Reclamation

Reclamation activities could impact badgers in the same ways described above for construction activities as well disturb foraging or dispersing badgers, causing them to move away from or to avoid Project areas undergoing reclamation. The impact of Project reclamation would be **significant**.

Summary

Grassland habitat throughout the Project area provides suitable foraging and denning habitat for American badgers, and all natural habitats (i.e., those that are not developed) provide cover and dispersal habitat for this species. Considering construction and operational activities together, the Project would result in the disturbance of up to approximately 403.29 acres of potential habitat for this species. Further, the Project could result in the injury or mortality of individuals within dens, and the loss of individual badgers could result in a decline in this species' populations. Therefore, the impact of Project construction, operations, and reclamation on American badgers and their habitat would be **significant**.

> **Mitigation Measure 3.4-13:** The Applicant shall implement the following measures prior to any ground disturbance, vegetation removal, or other activities in natural (i.e., undeveloped) habitat for construction or for the start of mining and reclamation activities associated with each new mining phase to ensure that injury or mortality of American badgers as a result of Project activities is avoided.
>
> a. Preconstruction surveys (occurring prior to all phases of ground disturbance or construction activity throughout the Project life) conducted for burrowing owls shall also be used to determine the presence or absence of badgers within the Project area, as well as within a 300-foot buffer around the Project area. If an active badger den is identified during preconstruction surveys, a construction-free buffer of 300 feet (or an alternate distance determined by a qualified biologist in consultation with CDFW) shall be established around the den if feasible. If a 300-foot buffer is infeasible, then the qualified biologist and CDFW shall determine whether a reduced buffer is preferable to evicting the badger (which would likely be the case for a single badger).
>
> b. During the period September 1 through the end of February, when young are unlikely to be present in a burrow, if a badger den is located within the Project footprint, the den shall be excavated by a qualified biologist to cause the badger to leave the area. Because badgers are known to use multiple burrows in a breeding burrow complex, multiple dense may need to be excavated. Ground disturbance can proceed only after

all dens within the impact area have been excavated to ensure that no badgers are present below-ground

c. During the period March 1 through August 31, when young could be present within a burrow, a biological monitor shall be present on the site during Project activities that occur within 500 feet of any known or suspected badger den to ensure the buffer is adequate to avoid direct impacts to individuals or den abandonment. Such monitoring shall occur until it is determined that young are of an independent age such that Project development would not result in harm to individual badgers. Once the biological monitor has determined that young badgers are old enough to leave their natal den or have vacated the site, the burrows can be excavated, and ground disturbance can proceed.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-15 discussed in the wildlife movement impact section would reduce impacts on dispersal/movement of American badgers. Implementation of Mitigation Measure 3.4-13 would avoid injury or mortality of individual badgers, or abandonment of natal dens with dependent young, that may occur if occupied dens are destroyed. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on American badgers and their habitats by training Project personnel on this species, its habitats, and measures necessary to avoid and minimize impacts.

In addition, implementation of Mitigation Measure 3.4-4c and 3.4-5b for the CRLF and CTS, respectively, would likely benefit this species by preserving and managing suitable habitat that could be used by this species. Because the Project has a limited (30-year) period in which mining would occur, and Project areas would be restored to natural habitat following completion of mining and reclamation, the mitigation measures, coupled with ultimate reclamation of the site, would minimize the potential for populations of badgers to be reduced by the Project (though see Impact 3.4-15 for the significance of Project impacts on wildlife movement). Implementation of mitigation measures could result in impacts to badgers, as badgers that are encouraged to leave their dens could be subject to increased predation risk or reduced reproductive success if they are unable to easily find alternative roosts. However, the net effects of mitigation measures would be preferable to having individuals injured or killed during Project activities.

Impact 3.4-14: Project activities would result in substantial adverse effects on jurisdictional wetlands, other waters, and riparian habitats. (Less than Significant with Mitigation)

The Project area supports jurisdictional wetlands and other waters (i.e., ponds, creeks, and drainages) that may be regulated by the USACE under Section 404 of the CWA and the RWQCB under Section 401 of the CWA and under the Porter-Cologne Water Quality Control Act. Creeks and drainages are also regulated by the CDFW under Section 1600 of the California Fish and Game Code, and both the RWQCB and CDFW may regulate streambanks and associated riparian habitats. These are all sensitive habitats, as most such wetland, aquatic, and riparian habitats contribute disproportionately to biodiversity by supporting many plant and animal species.

The USACE verified the boundaries of waters of the U.S. during a site visit in April 2017 that included the majority of Project areas. The delineation was expanded in June 2017 to include the geotechnical setback areas, but these additional areas have not yet been verified by the USACE.

Riparian habitat on the site includes willow-dominated riparian habitat on both sides of the existing at-grade crossing of Tar Creek (where the bridge is proposed), some willow and mulefat-dominated habitat along portions of Sargent Creek, and coast live oak-dominated mixed riparian woodland along drainages in the Phase 1 and 2 mining and geotechnical setback areas.

Collectively, construction and operational activities would adversely affect approximately 7,000 linear feet of potentially jurisdictional intermittent and ephemeral channels and drainages, 0.34 acre of stock pond, 0.05 acre of seasonal wetland, 0.03 acre of wetland seep, and 11.41 acres of mixed riparian woodland and forest.

Bridge construction and impacts to wetland, creek, and riparian habitats during mining activities would necessitate permits from the USACE under Section 404 of the CWA, the RWQCB under Section 401 of the CWA and/or the Porter-Cologne Water Quality Control Act, and the CDFW under Section 1600 of the California Fish and Game Code. During the permitting process, these agencies would ensure that impacts to jurisdictional habitats have been avoided and minimized the maximum extent practicable; that appropriate avoidance and minimization measures to limit impacts and avoid substantial impacts to water quality are implemented during Project activities; and that appropriate compensatory mitigation for impacts to jurisdictional habitats is provided.

To further address the potential for hazardous materials to enter creeks during Project construction and operations, the Project would implement a SPCCP and HMBP so that any spills or leaks would be controlled before they could enter waterways containing sensitive species. Both plans, which would include measures to reduce the potential for hazardous materials to be released as well as measures to contain any such materials before they could enter waterways, would be reviewed and approved by the County of Santa Clara.

Construction

The Project has been designed to avoid direct and indirect impacts to the most extensive and sensitive aquatic features on the Sargent Ranch (shown in Figure 3.4-3). With the exception of the bridge, road, and conveyor belt crossings, impacts to Sargent Creek and Tar Creek would be avoided with a minimum 150-foot setback. Construction of the bridge, road, and conveyor belt crossings over Tar Creek and Sargent Creek would result in the loss of woody riparian habitat and may result in temporary disturbance of jurisdictional waters within those creeks (e.g., as a result of the movement of construction personnel and equipment). However, permanent impacts to the creeks would be avoided with the use of a free-span bridge over Tar Creek and an arch culvert over Sargent Creek. Construction would not be able to avoid impacts to all wetlands and intermittent and ephemeral drainage channels; construction of the conveyor belt and access road to Phases 3 and 4 would impact 1,922 linear feet of intermittent and ephemeral drainages, and improvements to Old Monterey Road and the railroad spur would impact 315 linear feet of such drainages.

In addition to causing direct destruction of jurisdictional drainages, construction activity could result in other adverse effects on water quality, as discussed in Impact 3.4-3 for special-status fish. Such adverse effects, such as mobilization of pollutants and sediments into streams and riparian habitats, would reduce the habitat quality these features provide for plants and animals. Construction activities could also result in the introduction or spread of invasive plants and *Phytophthora* as described in Impact 3.4-1; *Phytophthora* could impair the health of native riparian plants, and the quality of riparian habitat could be degraded due to the loss of native riparian vegetation and/or increases in invasive plants.

Due to the loss of intermittent and ephemeral drainages, and potential degradation of water quality and introduction of invasive plants and *Phytophthora*, the impact of Project construction on jurisdictional wetlands, other waters, and riparian habitats would be **significant**.

Operation

Access Roads, Processing Plant, Conveyor Belt

Operation of these components would not directly affect creeks or wetlands. However, operational activities, such as truck traffic, could cause water quality impacts through discharge of pollutants. Therefore, the impact of Project operations on jurisdictional wetlands, other waters, and riparian habitats would be **significant**.

Mining Pits

Mining activities would cause the loss of 4,648 linear feet of intermittent and ephemeral drainages within Phase 1, 2, and 4 mining areas. The geotechnical setback areas for Phases 1 and 2 also support hydrologic features that may also be considered jurisdictional by the USACE and/or RWQCB, including wetland seeps near Phase 1 and a short reach of intermittent channel, a stock pond, and a small seasonal wetland north of the Phase 2 area. In the event that a slope failure were to occur during excavation, there would be encroachment into a portion of the geotechnical setback area to reestablish slope stability at the required grade, which could cause the loss of these jurisdictional features if they are in the area of encroachment. As a result, activities within geotechnical setback areas could impact up to 115 linear feet of an intermittent drainage, a 0.34-acre stock pond, 0.05 acre of seasonal wetland, and 0.03 acre of wetland seep.

Mining activities could also cause indirect impacts on water quality, as described above for construction impacts and in Impact 3.4-3 for special-status fish. Operational activities could also result in the introduction or spread of invasive plants and *Phytophthora* as described in Impact 3.4-1; *Phytophthora* could impair the health of native riparian plants, and the quality of riparian habitat could be degraded due to the loss of native riparian vegetation and/or increases in invasive plants.

Impacts of operational activities on the quantity of water reaching ponds, creeks, and riparian habitats in and downstream of the Project area were discussed in detail in Impact 3.4-3 for special-status fish. As discussed in that section, on-site consumptive use of water would have a negligible effect on flow in the Pajaro River and would therefore not result in measurable effects on aquatic or riparian habitats along the river.

All four mining pits would intercept groundwater and surface runoff that otherwise would have flowed on or below the surface of the area to be occupied by the pits and continued downslope to contribute hydrology to creeks such as Tar Creek and Sargent Creek. During mining within a given pit, a reduction in flow within areas downstream/downslope from that pit may occur. During reclamation, all pits would be graded so that pits would slope at a gradient of at least 1% toward graded swales. The swales in Pits 3 and 4 would carry water toward Sargent Creek, so that after reclamation, Sargent Creek would receive approximately the same input of surface water (and likely the same input of groundwater) as it currently does. After reclamation, Pits 3 and 4 would have gradual slopes, with the western portion sloping toward a retention basin in the central part of the pit and the eastern portion sloping toward a second retention basin, which would flow into the existing ephemeral stream.

Although no substantial changes in streamflow within Tar Creek would result from Project operations, Project operations would have a greater impact on flows in Sargent Creek during mining. Collectively, Phases 3 and 4 would include approximately 90.7 acres of watershed, including the acreage of the pits and their contributing watersheds, that would be intercepted, representing approximately 30% of the 700-acre Sargent Creek watershed upstream from these two phases. However, Pits 3 and 4 would not be mined concurrently, and although there may be some overlap between mining in Pit 4 and reclamation in Pit 3, the full impact of hydrologic alteration from mining in each phase would not occur simultaneously.

The ecological effects of such changes in flow on aquatic, wetland, and riparian habitats would be minor aside from impacts on the health and extent of riparian vegetation (addressed in the next paragraph). The ephemeral drainages downslope from Phases 1 and 2 are dominated primarily by upland vegetation rather than hydrophytes, and those drainages do not support any deep or long-lived pools or wetlands that provide habitat for amphibians or wetland-associated animals. Therefore, although their upper watershed would be temporarily diverted, these bankform features would still exist and would still concentrate and convey some ephemeral flows to the Pajaro River watershed. The impact of changes in flow and contributing watershed on species that depend upon riparian, pond, and wetland habitat, such as CRLF, CTS, and tricolored blackbird, are evaluated under the separate impact discussions for those species.

The only location where mixed riparian forest and woodland is present downslope/downstream from mining areas in locations where adverse effects from flow interception/diversion could occur is along Sargent Creek between and downstream from Pits 3 and 4. High-quality riparian habitat, with mature willows and structurally diverse vegetation, is present along this reach. A reduction in inflow to this reach of the creek for 20-30 years would likely have an effect on the riparian habitat along Sargent Creek. However, mature trees that form the overstory, such as arroyo willow, a species known to develop deep rooting systems in response to falling groundwater, would not die unless already in poor health or stressed.

More shallowly rooted plants, including understory vegetation that creates riparian habitat complexity and increases habitat value, may be more severely affected, and experience a reduction in density or spatial extent. Additionally, the reduction in hydrology and flows may inhibit ongoing recruitment of willows, especially in areas that currently receive regular seasonal surface flows but that may have shorter duration flows or no flow in shallower areas of the channel after the reduction. Finally, a reduction in surface water flows could reduce inundation that currently prevents weed infestation, making more areas susceptible to colonization by upland or facultative wetland weed species that could degrade the riparian habitat.

These adverse effects of mining on riparian habitats downstream from the Project site would occur only during mining activity. Because Phase 3 and 4 mining would last for a total of approximately six years, impacts of flow interception/redirection would not last much longer than that.

Otherwise, changes in groundwater or surface hydrology resulting from mining would not have substantial adverse effects on riparian habitat. Mixed riparian forest and woodland in the uppermost reach of Sargent Creek is upslope from all mining areas, and hydrology supporting this habitat would therefore not be adversely affected. Phases 1 and 2 mining would affect ephemeral or intermittent streams that do not support riparian habitat. For the reasons discussed above, the impact of Project operations on jurisdictional wetlands, other waters, and riparian habitats would be **significant**.

Reclamation

The reclamation plan indicates that flow that might be intercepted or redirected during mining would be restored to flow to the streams that currently receive such flow once mining is completed. The Tar Creek bridge would remain in place, and removal of conveyor belt crossings of Sargent Creek and Tar Creek would not disturb jurisdictional waters within those creeks. Therefore, the impact of Project reclamation on jurisdictional wetlands, other waters, and riparian habitats would be **less than significant**.

Summary

Because resource agency permits have not yet been issued, and the conditions of those permits are not yet known with certainty, it is uncertain the extent to which impacts to jurisdictional habitats would be avoided or minimized or that appropriate compensatory mitigation for impacts to jurisdictional habitats is provided. The significance threshold for natural communities such as riparian habitats would be any reduction in the extent of the community compared with baseline, or a change that could threaten the long-term existence of the community itself. The threshold of significance for wetlands is no-net-loss of extent. Implementation of the Project would cause a reduction in the extent of riparian habitats relative to baseline conditions and a net loss of wetlands, aquatic habitats, and riparian habitats. Therefore, the impact of Project construction and operations on jurisdictional wetlands, other waters, and riparian habitats **would be significant**.

> **Mitigation Measure 3.4-14a:** Prior to issuance of any development permits, the Project Applicant shall compensate for the estimated loss of any jurisdictional wetlands, ponds, creeks, and riparian habitat that would occur over the Project's permitted term through on-site or off-site restoration, creation, or enhancement of similar or higher-quality habitat, the purchase of mitigation credits, or a combination of these two approaches. A qualified biologist shall determine the extent of impacts based on the acreage of overlap of Project construction and operations/mining areas on wetlands, ponds, and riparian habitat, and the linear footage of creek channel within those Project impact areas. A

minimum of a 1:1 (on an acreage basis for wetlands, ponds, and riparian habitat and a linear footage basis for creeks) replacement-to-loss ratio for in-kind habitat (or equivalent or greater as determined in coordination with the USACE, CDFW, and RWQCB during permitting) is required. Enhancement of existing, low-quality habitats (rather than restoration or creation) is acceptable if a substantial increase in ecological functions and values can be achieved, as determined by a qualified biologist in coordination with the USACE, CDFW, and RWQCB.

If mitigation is to be satisfied through purchase of mitigation credits in an agency-approved mitigation bank, such as the Pajaro River Mitigation Bank (for wetlands), proof of the purchase of credits shall be provided to the County Department of Planning and Development prior to the start of ground-disturbing activities. If mitigation is to be satisfied through Project-specific habitat restoration, creation, or enhancement, the mitigation shall be described in an HMMP, which shall be prepared by a qualified biologist retained by the Applicant and submitted to the County Department of Planning and Development for review and approval prior to the start of ground-disturbing activities. At a minimum, the HMMP shall include the following:

- A summary of Project impacts to jurisdictional habitats;
- The location of all restoration, creation, or enhancement activities;
- Detailed description of all restoration, creation, or enhancement activities;
- Evidence of a suitable water budget to support any restored, created, or enhanced aquatic and riparian habitats;
- The species, amount, and location of plants to be installed in the created habitats;
- The time of year for planting and the method for supplemental watering during the establishment period;
- Management and maintenance activities, such as weeding of invasive plants, providing for supplemental water, and repair of water delivery systems;
- The monitoring period, which shall not be less than five years.
- Criteria for mitigation efforts to be deemed a success; at a minimum, success for vegetated wetlands and riparian habitats would include at least seventy-five percent (75%) cover by native vegetation, or seventy-five percent (75%) survival of planted or seeded native riparian vegetation, within the target mitigation acreage by the end of year five;
- Adaptive management procedures that accommodate the uncertainty that comes with restoration projects. These include, but are not limited to, measures to address colonization by invasive species, unexpected lack of water, excessive foraging of installed plants by native wildlife, and variable climatic conditions. This section will also describe the process by which adaptive management decisions will be made and implemented;
- A description of the financial mechanisms for funding of all monitoring activities and ensuring that the created aquatic and riparian habitats shall be preserved and managed in perpetuity.

Mitigation Measure 3.4-14b: The Project Applicant shall compensate for any loss of riparian habitat that occurs along Sargent Creek adjacent to or downstream from Phases 3 and 4 as a result of a reduction in streamflow as a result of mining. A baseline survey shall be conducted prior to initiation of any earth-moving in Phases 3 and 4 to document the areal extent of woody riparian vegetation, including mapping of canopy and native understory vegetation separately, within the entire reach of Sargent Creek downstream from Pits 3 and 4. Mapping of these same parameters shall then be conducted in the year following completion of reclamation in Phases 3 and 4 to determine whether any decline in the overall extent of woody riparian canopy or native understory within this reach has occurred and is caused by the Project. If any decline has occurred and is caused by the Project, compensatory mitigation shall be provided via the restoration, creation, or enhancement of riparian habitat, purchase of mitigation credits, or a combination of these two methods as described in Mitigation Measure 3.4-14a (or as otherwise required to provide equivalent or greater mitigation by regulatory agencies as a condition of Project permits), except that compensatory mitigation for temporary changes in hydrology during mining shall be provided at a minimum ratio of 1.5:1 (mitigation:impact), on the basis of the acreage of decline in canopy or native understory, whichever is greater, that has occurred since the baseline survey. This ratio is higher than the 1:1 replacement ratio specified in Mitigation Measure 3.4-14a due to the temporal loss in riparian habitat functions and values that will have occurred over the 20-30 year period and due to the higher-habitat quality along lower Sargent Creek.

Unless all mitigation is provided via purchase of credits from a mitigation bank, an HMMP describing Project-specific riparian habitat mitigation shall be prepared when the magnitude of the impact is known (i.e., after completion of Phases 3 and 4 mining) and the mitigation location is known. Aside from the mitigation ratio and the timing of preparation of the HMMP, mitigation shall occur exactly as described in Mitigation Measure 3.4-14a.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-1b would reduce the potential for riparian habitats that occur near the Project site (i.e., outside of impact areas) to be adversely affected by the introduction and/or spread of invasive species or *Phytophthora*. Implementation of Mitigation Measure 3.4-3 would reduce impacts to waters of the U.S. and state and to sensitive riparian habitats by minimizing indirect impacts of construction and operational activities on water quality and on these habitats. Mitigation Measure 3.4-14a would compensate for unavoidable impacts to jurisdictional habitats that occur directly as a result of construction and mining, and Mitigation Measure 3.4-14b would compensate for impacts to riparian habitats along Sargent Creek that occur as a result of a reduction in flow reaching these habitats during Phase 3 and 4 mining. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on these sensitive habitats by training Project personnel on these habitats and measures necessary to avoid and minimize impacts. Collectively, implementation of these mitigation measures would reduce impacts on jurisdictional habitats to less-than-significant levels by ensuring that there is no net loss of the extent, or at least of ecological functions and values, of these habitats.

Impact 3.4-15: Implementation of the Project would interfere substantially with wildlife movement. (Significant and Unavoidable)

As described in Section 3.4.3.5 and shown in Figure 3.4-7, the Project is located within an area of important habitat connectivity for wildlife, providing landscape linkages and genetic exchange for species between the Santa Cruz Mountains and Diablo Range, and between these mountain ranges and the Lomerias Muertas and Gabilan Range. The site's primary relation to habitat connectivity is its proximity to several bridges and culverts (Figure 3.4-8) that allow wildlife to safely cross under U.S. 101 rather than attempting to cross over the highway's surface. The Tar Creek and Pajaro River undercrossings are particularly important for wildlife movement. For species such as the CRLF and CTS, viable breeding occurrences on either side of U.S. 101 are likely too far apart (mostly owing to the absence of suitable breeding habitat and paucity of suitable upland habitat due to agricultural activities east of U.S. 101) for individuals to be able to disperse between breeding locations, and no biologically meaningful dispersal for such species would occur under either baseline or Project conditions. Therefore, in the following impact analysis, references to Project impacts on wildlife movement refer to those larger, more mobile species for which one individual can move among the various mountain ranges and smaller, less mobile species with viable populations on both sides of U.S. 101.

Construction

Construction activities could interfere with wildlife movement in several ways. Construction vehicles accessing the site along Old Monterey Road could disturb animals attempting to move toward or away from U.S. 101 (e.g., in the vicinity of the Tick Creek undercrossing), and could pose some collision risk. The noise and movement of construction vehicles, personnel, and equipment on the rest of the Project site (such as will be present during construction of bridges over Tar Creek and Sargent Creek, access roads, road improvements along Old Monterey Road and at its junction with U.S. 101, the conveyor belt, the rail spur, and the processing plant) could also disturb animals, causing them to divert around the work areas or suspend their dispersal activity until construction activity is not occurring.

In most areas, the amount of construction traffic, especially from dusk until dawn when many animals may be dispersing, would not be so high as to preclude access to and from important highway undercrossings. Animals would still be able to move through construction areas, albeit most easily between dusk and dawn. Construction at the processing plant likely represents the greatest construction impact to animal movement given the concentration of equipment and personnel at that plant during construction, and its proximity to the important U.S. 101 crossing of Tar Creek and the UPRR tracks; most animals would likely not be willing to disperse through or around the processing plant during daytime periods when construction occurs.

Construction would result in the removal of some vegetation, including limited riparian habitat at the Tar Creek bridge and oak woodland along the access road, that provides cover for dispersing animals. However, the amount of cover that would be removed by construction activities is low, and ample cover for dispersing animals would remain following construction. The access road would not be built with high, vertical walls or other features that would impede animals from physically crossing over it. Because Project construction would discourage wildlife movement through the important U.S. 101 crossing of Tar Creek and the UPRR tracks, construction impacts on wildlife movement would be **significant**.

Operation

Operational activities could interfere with wildlife movement in several ways:

- disturbance of animals by vehicles, personnel, and equipment;
- vehicular collisions;
- discouragement of animal activity as a result of night lighting at the processing plant;
- physical impediments posed by the conveyor belt and processing plant; and
- loss of vegetative cover for dispersing animals.

These impacts are discussed below for each Project component (see Figure 3.4-8 for a depiction of the locations of these Project components relative to U.S. 101 undercrossings).

Roadway Improvements

Improvements made by the Project to Old Monterey Road and its junction with U.S. 101 include repaving and slight widening of portions of Old Monterey Road and widening an existing U.S. 101 on-ramp east of Sargent Ranch. Traffic on Old Monterey Road and under U.S. 101 along Tar Creek would be substantially higher with the Project than under baseline conditions, as 167 new daily vehicle trips would be generated by the Project. These include daily trips by up to 144 haul trucks, eight vehicles arriving at the site for material delivery and maintenance, and 15 employees.

This increase in vehicular activity would result in an increase in disturbance of animals that currently may move across Old Monterey Road (as a result of vehicular movement and noise) and would increase the risk of animal-vehicle collisions. Although most vehicular activity (particularly by haul trucks) would occur during daytime, the plant would be open 4:30 a.m. to 5:00 p.m. Vehicles would begin accessing the site before dawn (year-round), and during winter, vehicles leaving the plant at its 5:00 p.m. closing time would likewise be traveling in dusk/dark conditions. As a result, crepuscular (active around dawn and dusk) and nocturnal animals could be disturbed by this increase in vehicular traffic on Old Monterey Road in addition to diurnal animals (active during daytime). However, an increase of 167 daily vehicle trips over the course of the 12.5-hour workday amounts to an average of one vehicle every 4.5 minutes. Thus, for animals that wanted to cross Old Monterey Road, there would be opportunities to make such a crossing between vehicle appearances.

The new bridge over Tar Creek would inhibit wildlife movement along the creek to some extent. Currently, the at-grade crossing poses no impediment to wildlife movement and even provides a shallow-water crossing (lacking dense riparian vegetation) that wildlife could use to cross through the creek and riparian corridor. The proposed bridge would span the channel. However, its abutments could provide a physical impediment that wildlife would need to circumvent by moving under the bridge or around the abutments (i.e., crossing this access road where it then comes back down to the existing grade), and noise from traffic could inhibit wildlife movement under the bridge when vehicles are present. The types of vehicles using the new bridge, and the timing and frequency of vehicle trips, would be as described for Old Monterey Road above.

Conveyor Belt and Access Road

To transport mined material from the Phase 3 and Phase 4 mining areas to the processing plant, an approximately 1.6-mile-long electricity-powered conveyor belt and an associated access/maintenance road would be constructed just prior to the initiation of mining at Phase 3. The location of the conveyor belt is shown on Figures 2-11 and 2-12. The conveyor belt would be 4 feet wide. Supports would be spaced every 10 to 20 feet but could be extended with truss bracing to up to 60 feet apart if necessary. Typical heights off the ground surface would vary from 3 to 5 feet but could be increased in places to allow for animal undercrossings. The belt would be supported by a series of rollers to prevent sagging, typically spaced 6 inches to 12 inches apart. An access road for use by quarry employees and maintenance personnel and equipment would be located parallel to the conveyor belt.

The proposed conveyor belt and access road are oriented roughly in a north-south direction. Thus, for wildlife moving between the Santa Cruz Mountains to the west and the Lomerias Muertas (and then to the Gabilan Range) and Diablo Range to the east, the proposed conveyor belt and maintenance road would be located roughly perpendicular to the path of movement. From the main plant southwest to Phase 3 and Phase 4 mining areas, any animals moving between the Santa Cruz Mountains and the U.S. 101 bridge over the Pajaro River or highway undercrossings south of that bridge would need to either cross under the conveyor belt or travel around the Project site (e.g., accessing these undercrossings by moving south along the railroad tracks from areas north of Tar Creek or traveling around/south of Phase 3 and Phase 4 mining areas). The conveyor belt and maintenance road might similarly impede animals moving from the west or southwest toward the U.S. 101 crossing over Tar Creek and the UPRR tracks.

Use of the access road by personnel and vehicles would be limited. Because excavated materials would be transported from the mining areas to the processing plant via the conveyor belt, use of the access road would be limited to the passage of quarry employees (a maximum of 15 individuals) to and from the active mining area each day, as well as occasional maintenance. This level of daily traffic would not substantially impede wildlife movement across the unpaved maintenance road, and the road itself would not be constructed with high vertical walls or other physical impediments to wildlife movement.

The conveyor belts height of 3 to 5 feet, combined with a width of 4 feet, would allow most animals, and even larger mammals such as coyotes and mountain lions, to readily pass underneath the structure. Deer would be less likely to attempt, or be able, to cross under the conveyor if it is no more than 3 to 5 feet high. The noise and motion of the conveyor belt when it is operating is likely to discourage animals from even approaching, let alone crossing under, the belt.

If the conveyor belt is operating from 4:30 a.m. to 5:00 p.m. Monday through Saturday, there would still be opportunity for animals other than large deer to move under the belt at night, during evening daylight from late winter to late fall, or on Sundays. However, animals are not likely to readily attempt to cross under the belt when it is operating, such as during the early morning and daytime, 6 days/week. As a result, the conveyor belt would inhibit wildlife movement in an east-west direction through the site and access to the culverts and other undercrossings that facilitate wildlife movement beneath U.S. 101. These impacts would occur for approximately 6 to 7 years, while the Phase 3 or Phase 4 pits are being actively used for mining. Subsequently, after Phase 4 mining is completed, the conveyor belt would be removed.

Rail Spur

The rail spur would be long enough that freight cars would not sit on the existing tracks, and therefore would not block the ability of animals to cross over the tracks when using the U.S. 101 crossing of Tar Creek and the UPRR tracks. Trains would be loaded during the day, but connection to the train and rail transport would be scheduled to take place at night (generally between 11:00 p.m. and 5:00 a.m.). Thus, up to three times per week, a locomotive would arrive during the night to connect the freight cars to a northbound train (a process that takes approximately 30 minutes) and haul the cars north to San Jose and the Peninsula. The use of the rail spur would provide noise and equipment movement that would disturb animals in the vicinity, and during the brief period (30 minutes, three times per week) that the freight cars are being moved in or out, animals that might otherwise use the U.S. 101 undercrossing may avoid doing so. However, except for these limited periods, the use of the rail spur and Project-related train activity in general would not affect wildlife movement.

Mining Pits

Mining activities would impede wildlife movement, at least in the areas in which mining is actively occurring. In the Phase 1 and Phase 2 mining areas and the permanent overburden stockpile area, removal of oak woodland and mixed riparian woodland for mining would remove vegetation that animals may use for cover during dispersal. Physical modifications of the ground from mining and stockpiling, such as making grades steeper, would impede wildlife movement to some extent. However, most species would be able to traverse most slopes that are envisioned in the mining pits, and larger animals that had difficulty navigating steep slopes would be able to move around the pits if necessary. Mining and reclamation activities themselves, such as the noise and disturbance associated with the movement of equipment and personnel, would discourage many animals, particularly larger mammals, from approaching the mining pits when mining is actively occurring.

As indicated previously, it is the proximity of the mining areas, and the Project site in general, to important U.S. 101 crossings (Figure 3.4-8) that could have the most impact on regional wildlife movement. The Phase 1 mining area is located approximately 1,950 feet from the highway bridge over Tar Creek and the UPRR tracks, and the overburden stockpile area is approximately 950 feet from this crossing. Animals moving toward or from that undercrossing would be subjected to disturbance from mining activities and loss of vegetative cover in the Phase 1 and 2 mining areas, and the overburden stockpile area. Although animals can move around these areas, and possibly through them when moving at night (when mining is not occurring), animals may be discouraged from dispersing through that undercrossing during the daytime when mining is occurring at Phase 1 or Phase 2, or when activity at the overburden area is occurring – especially when considered in conjunction with activity at the processing plant (discussed below). The Phase 1 mining area is located approximately 0.4 mile from the U.S. 101 bridge over the Pajaro River. Though animals using that undercrossing would be able to move around those mining areas, the mining areas would make it somewhat more difficult for movement between that culvert and areas to the northwest.

The Phase 3 and Phase 4 pits are not located particularly close to important U.S. 101 undercrossings. They are approximately one (1) mile southwest of the bridge over the Pajaro River. Although animals using that undercrossing would still need to navigate the conveyor belt, as described above, the one-mile distance between the bridge and the pits would provide ample opportunity for animals to move through the area to the north of the pits. Mining would only occur at one of the four pits at a time, with no overlap in mining activities proposed between pits. Reclamation at one pit (e.g., Phase 3) may be occurring while mining occurs at another pit (e.g., Phase 4), however, so at any given time, there could be mining or reclamation activities occurring at two of the four Project phases. Nevertheless, even when reclamation activities are occurring at Phase 2 and mining activities are occurring at Phase 3, there would be an area at least 0.8 mile wide between the two areas through which animals could move when moving to or from the Pajaro River bridge.

The Phase 3 and Phase 4 pits are located closer to highway crossings south of the Pajaro River bridge, such as the culvert immediately south of that bridge or the Betabel Road/Y Road overcrossing. Because animals using those highway crossings would also have to navigate the river itself, any animals mobile enough to navigate through the river and under U.S. 101 would be capable of moving around the Phase 3 and Phase 4 mining areas when making such long-distance movements.

Processing Plant

Owing to the physical location of the processing plant, coupled with its close proximity to the Tar Creek/UPRR undercrossing of U.S. 101 (approximately 330 feet away), the main plant would occupy a large proportion of the area immediately west/southwest of the undercrossing. Animals that currently move through the fields where the processing plant is proposed, including the screening berm between the processing plant and the railroad tracks and the proposed rail spur (refer to Figure 2.4-2), would need to move around the processing plant once constructed. There would still be space north, east, and south of the processing plant through which animals could move, but the plant would occupy a large area of open space immediately adjacent to the undercrossing.

Noise and movement of equipment and personnel would disturb animals, potentially discouraging them from moving along their intended pathways. Some of the animals for which the undercrossing is important are active at night, so disturbance from pre-dawn and dusk activity at the plant (noise, movement of equipment and Project personnel, and lighting) would likely discourage some animals from moving along their intended pathways. Such disturbance could particularly affect crepuscular animals that could be moving in the very early morning or on winter evenings when mining work may continue until after sunset. Some permanent nighttime lighting would remain on at the plant throughout the night, though this lighting would be the minimum necessary for site security. However, most of the detections of animals using U.S. 101

undercrossings during the most recent road ecology study in the Project vicinity – including the Tar Creek undercrossing – occurred during the daytime (T. Diamond, pers. comm.), when the plant would be in operation 6 days/week.

Sufficient physical space would be present around the processing plant for movement by all animals that currently use the Tar Creek/UPRR undercrossing to move around the plant. The 150-foot setback between the processing plant and the riparian corridor along Tar Creek would include small flood protection berms, but these berms would be no higher than three to five feet, would be vegetated, and would not be too steep for animals to navigate. Animals would therefore be physically capable of moving through this 150-foot setback area. Although animals moving along the west/south side of Tar Creek past the Project site would need to navigate around or under the new bridge over Tar Creek, they would be physically able to do so. Animals attempting to move to or from the Tar Creek undercrossing from points to the south could move through open space that would not be impacted by the Project on the south side of the processing plant and then along the frontage road and railroad tracks east of the processing plant.

The area east of the processing plant includes the rail line, frontage road, and ruderal vegetation that is 140 feet wide or more. Although animals may move through these areas less frequently after Project implementation, due to disturbance associated with the processing plant and Project-related traffic, animals would still be physically capable of moving around the processing plant. For the reasons discussed above, the impact of Project operations on wildlife movement would be **significant**.

Reclamation

Following the completion of mining and reclamation of the site, the site would provide habitat for wildlife movement similar to current conditions. Although the loss of oak-dominated woodlands in mining Phases 1 and 2 and at the overburden stockpile site may have some lingering effect on wildlife movement as a result in a reduction of cover for dispersing animals, wildlife movement would be very similar to baseline conditions following reclamation and removal of the conveyor and processing plant. Therefore, the impact of Project reclamation on wildlife movement would be **less than significant**.

Summary

As discussed above, operation of the Project would introduce a number of impediments to wildlife movement between important U.S. 101 undercrossings (particularly the Tick Creek, Tar Creek/UPRR, and Pajaro River undercrossings) and source populations of wildlife in the Santa Cruz Mountains, the Diablo Range, and the Gabilan Range. Although space would still be available for animals to physically move through or around Project components, and animals could move through these undercrossings when Project activities are not occurring, animals have very little information about when and how they might safely move past Project areas (e.g., regarding whether or not noise, night lighting, and the movement of heavy equipment and Project personnel pose a threat, or regarding hours when Project facilities will or will not be in operation).

If the Project were to result in a substantial reduction in movement of individuals, exchange of genes and individuals among populations could be reduced to the point of reducing genetic variability in one or more population, which could make populations more vulnerable to declines due to disease or other stressors (Serieys et al. 2021) and reducing the ability for dispersants from one population to "rescue" declining populations elsewhere. Therefore, the Project operations would interfere substantially with wildlife movement, and this impact would be **significant.**

> **Mitigation Measure 3.4-15:** The Applicant shall implement the following measures to reduce the impacts of Project construction, operation, and reclamation on wildlife movement.
>
> 1. Fencing in and around the Project site shall be designed and configured to facilitate wildlife movement around areas of intensive Project activity, such as facilitating movement around the processing plant. Areas where fencing shall be designed to facilitate wildlife movement include fencing along the outer edge of the Tar Creek riparian corridor (on both sides of the creek); the eastern site boundary (along the edge of the existing railroad tracks), including the area north of Tar Creek adjacent to the existing residence; the southern boundary of the processing plant area; and areas immediately west and northwest of the processing plant area that would not be occupied by mining activity. Such fencing shall incorporate the following components.
>
>   a. Barbed-wire fencing shall consist of no more than five strands.
>
>   b. To facilitate wildlife crossing over and under fencing (except for fencing around the main plant, which should not be designed for wildlife entry), a gap of at least 20 inches shall be provided between the ground and the bottom wire, board, or rung to allow fawns to pass under the fencing, and the top wire shall be no more than 40 inches high to allow more mature deer to jump over.
>
>   c. Where fencing is not necessary for livestock management, a smooth (instead of barbed) wire shall be used for the top and/or bottom strands.
>
>   d. At intervals of no more than every 200 feet, a segment of fencing at least 8 feet long with wooden poles instead of a top strand of wire shall be provided to allow animals such as gray foxes, mountain lions, and bobcats to more easily cross over the fencing.
>
>   e. No new fencing shall be installed along the entrance road or around the bridge over Tar Creek, with the exception of a gate to allow control of vehicle access to the site.
>
> 2. Fencing at least 10 feet in height shall be installed around as much of the processing plant as possible (on the north side adjacent to Tar Creek and as much of the east side as is feasible with construction of the rail spur), and screening fabric shall be installed on that fencing to prevent light spillover and block visible signs of physical activity (movement of people and equipment) from view of wildlife outside the processing plant. The fencing details and specifications shall be included in the Wildlife-Compatible Fencing Plan (described above) and reviewed and approved by the County Department of Planning and Development.

3. The bridge over Tar Creek shall be designed to maximize open space where wildlife can cross under the bridge (e.g., spaces between the abutments and top of bank shall be left as open as possible). No new fencing shall be added at or around the bridge. Engineering plans for the Tar Creek bridge shall be provided to the County Department of Planning and Development as part of the processing plant building per or any grading permit submittal, whichever comes first.
4. Along Old Monterey Road between its junction with U.S. 101 and the entrance to the Project site, the Applicant shall install signs placed every ½-mile warning drivers to watch for animals and to observe the speed limit, which shall be no more than 25 miles per hour to minimize vehicle collisions and reduce vehicular noise. Such signage shall also be placed along the conveyor belt access/maintenance road, indicating a speed limit of no more than 15 miles per hour.
5. At intervals of no less than every 1,000 feet, the conveyor shall be elevated so that the bottom of the conveyor belt structure is at least 8 feet clear above the ground to facilitate movement of larger animals under the belt.

Significance after Mitigation: Significant and unavoidable.

Implementation of Mitigation Measure 3.4-15 would reduce impacts of the Project on wildlife movement by minimizing constraints to wildlife movement posed by Project fencing; minimizing disturbance of animals and alteration of movement patterns as a result of lighting; providing animals the ability to move under the Tar Creek bridge; reducing collisions between Project-related vehicles and animals; and ensuring that even the largest animals that occur on the site can move under the conveyor belt. Mitigation Measure 3.4-4b would reduce impacts on wildlife movement by minimizing lighting that might discourage some animals from moving through lit areas. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on wildlife movement by training Project personnel on the measures necessary to avoid and minimize impacts.

However, the various ways in which Project operations would reduce the degree to which animals can safely traverse U.S. 101 would reduce the frequency of successful crossings. Given the location of the Project site, in an area where movement of animals in multiple directions and among multiple populations is very important, a reduction in the frequency of successful crossings over a 30 to 35-year period would have implications for regional movements, gene exchange, and potentially population viability.

Therefore, even with implementation of Mitigation Measure 3.4-15, this impact remains significant and unavoidable.

Impact 3.4-16: Project activities would conflict with County ordinances and policies intended to protect biological resources. (Less than Significant with Mitigation)

Tree Preservation and Removal Ordinance

Construction activities, such as road improvements and the installation of Tar Creek Bridge, would remove native oak trees having a main trunk or stem measuring 37.7 inches or greater in circumference. Mining activities in the Phase 1 and Phase 2 quarry sites would also remove ordinance-protected oaks. Because the Project site parcels are within a "-d" (Design Review) combining zoning district, these trees are deemed protected trees under Section Sec. C16-3 of the County's Tree Preservation and Removal Ordinance. Removal of protected trees would be a **significant** impact and requires a permit from the County and replanting and/or re-vegetation plan for all trees to be removed. An application to remove protected trees is part of the overall Use Permit application for the proposed Project. Mitigation Measures 3.4-16a and 3.4-16b would address the ordinance's requirement for replanting and/or re-vegetation.

Riparian Buffer Policies

With the exception of the proposed Tar Creek Bridge, the Project would maintain a 150-foot or greater buffer from Project site creeks, consistent with General Plan Policy R-RC 37. The Tar Creek Bridge would replace an existing at-grade, in-water crossing and would span the banks of the creek and the majority of the riparian area. The bridge would be approximately 24 feet in width and 90 feet in length with a 70-foot span over Tar Creek. Because the creek crossing is already developed, and the new bridge would free span the creek, providing additional protection of the creek from adverse impacts, the Project would not conflict with County riparian buffer policies, and this impact would be **less than significant**.

Oak Woodland Impacts

Coast live oak-dominated woodlands, including coast live oak forest and woodland and mixed riparian woodland, are present in several areas within the Phases 1 and 2 mining areas, their respective geotechnical setback areas, and the permanent overburden stockpile area. Impacts to riparian habitats, including oak-dominated mixed riparian habitat, during mining activities would necessitate permits from the CDFW under Section 1600 of the California Fish and Game Code, and possibly also from the RWQCB under the Porter-Cologne Water Quality Control Act. During the permitting process, these agencies would ensure that impacts to jurisdictional habitats have been avoided and minimized the maximum extent practicable, and that appropriate compensatory mitigation for impacts to jurisdictional habitats is provided.

Construction

Most construction activities would not impact any oak woodland, as no oak-dominated habitats are present in areas where berms, roads, bridges, or the processing plant would be constructed. However, construction of the conveyor belt would impact approximately 0.6 acre of coast live oak forest and woodland. Construction of the conveyor belt could also result in the introduction or spread of invasive plants and *Phytophthora* as described in Impact 3.4-1; *Phytophthora* could impair the health of oaks, and the quality of oak woodland habitat could be degraded due to the loss of native riparian vegetation and/or increases in invasive plants. This impact would be **significant**.

Operation

Operational activities would impact oak-dominated woodlands, including coast live oak forest and woodland and mixed riparian woodland, within the Phases 1 and 2 mining areas, their respective geotechnical setback areas, and the permanent overburden stockpile area. Operational activities would result in the loss of approximately oak woodland habitat, and additional oak woodland is present in the Phases 1 and 2 geotechnical setback areas, which may be impacted as well. Operational activities could also result in the introduction or spread of invasive plants and *Phytophthora* as described in Impact 3.4-1; *Phytophthora* could impair the health of native oaks, and the quality of oak woodland habitat could be degraded due to the loss of native riparian vegetation and/or increases in invasive plants. This impact would be **significant**.

Reclamation

Reclamation activities would not involve tree removal, as all trees would have been removed during construction and operations. This impact would be **less than significant**.

Summary of Oak Woodlands Impacts

Collectively, Project construction and operational activities would result in the loss of up to 40.4 acres of oak-dominated woodlands, including coast live oak forest and woodlands and mixed riparian woodland dominated by oaks. Loss of oak woodland could be reduced through the conditions of resource agency permits. However, because permits have not yet been issued, these conditions are not yet known. The significance threshold for impacts to oak woodlands is a decrease of 0.50 acre or more in the native oak canopy of an oak woodland. The Project would result in impacts that far exceed this threshold, and therefore, the impacts of Project construction and operations on oak woodlands would be **significant**.

Mitigation Measure 3.4-16a:

1. Prior to removal of any oaks, or any other trees protected under Section Sec. C16-3 of the County's Tree Preservation and Removal Ordinance, from the Project area, a tree removal plan and arborist report shall be submitted identifying the species type, acreage, diameter, and amount of canopy of oak trees or other protected trees proposed for removal. The report shall also designate oak woodland as high-quality or medium-quality for the purposes of establishing the mitigation ratio. The arborist report shall be prepared by an I.S.A. Certified Arborist, Registered Professional Forester, or another professional approved by the County Department of Planning and Development. Reports may be submitted separately for the construction phase and by Project mining phase, prior to the start of tree removal within each phase.

2. The Applicant shall implement both of the following two measures to compensate for the loss of any oak woodland habitat to ensure that it complies with the County of Santa Clara Planning Office Guide to Evaluating Oak Woodlands Impacts.

   - Planting Replacement of Oak Trees. New oak trees shall be planted on the Project site to compensate for lost oaks, though the planting of new oak trees shall not fulfill more than fifty percent (50%) of the mitigation requirement for the Project. The objective of tree planting shall be to establish new oak woodland at a ratio of 2:1 or 3:1 based on the condition of the oak woodland habitat: 2:1 replacement is required for medium-quality oak woodland habitat; and 3:1 replacement is required for high-quality oak woodland habitat. The following standard mitigation ratios shall be used, unless a different ratio is approved by the County Department of Planning and Development based on site-specific characteristics associated with the mining phases:

- For the removal of one small tree (5 to 18 inches): two 24-inch boxed trees or three 15-gallon trees.
- For the removal of 1 medium tree (18 to 24 inches): three 24-inch boxed trees or four 15-gallon trees.
- For the removal of a tree larger than 24 inches: four 24-inch boxed trees or five 15-gallon trees.

Tree replacement shall be with like species unless alternate species are approved by the County. A Tree Planting and Maintenance Plan shall be submitted for County review and approval showing species, size, spacing and location of plantings and the location and species of established vegetation. Tree plantings shall be monitored for five years following planting, and a survival rate of seventy-five percent (75%) shall be required. Should the planted trees fail to meet the established performance and survival criteria, the Project Applicant shall be responsible for additional plantings and management activities necessary to ensure the long-term success of planted mitigation trees.

- Conservation Easement*.* For mitigation of the remaining oak woodlands impacts not mitigated by planting replacement oak trees, existing native oak trees on or off the Project area shall be protected from future development through a conservation easement in perpetuity or fee title dedication to the County or other qualified entity approved by the County, and/or through inclusion in the conservation easement referenced in Mitigation Measure 3.5-4b. Oak woodland offered as mitigation must be configured in such a manner as to best preserve the integrity of the oak ecosystem and minimize the ratio of edge to area. Priority should be given to conserving oak habitat adjacent to existing woodlands under conservation easements, public lands, or open space lands. The protection of existing oak woodlands through conservation easements shall mitigate for the loss of oaks at a ratio equal to 2:1 (for medium quality oak woodland habitat) or 3:1 (for high quality oak woodland habitat) as determined by the County of Santa Clara Department of Planning and Development. Land proposed as mitigation, when viewed with adjacent protected conservation land, should not result in conserved parcels of less than one acre.

Mitigation Measure 3.4-16b: The Applicant shall provide mitigation to compensate for impacts to ordinance trees in compliance with Section Sec. C16-7 of the County's Tree Preservation and Removal Ordinance. Mitigation provided per Mitigation Measure 3.4-16(2) for oak tree replacement will satisfy mitigation requirements for impacts to ordinance-sized oak trees. For other tree species, the Applicant will prepare a replanting and/or re-vegetation plan for all ordinance-sized trees to be removed. Replacement trees shall be of a like kind and species of tree removed, if native and feasible, or of a kind and species to be determined by the Planning Department. The replacement tree(s) need not be in the same location of the tree removed, but the replacement trees will be planted somewhere on Sargent Ranch. Replacement tree planting shall size and ratio shall be as follows:

- For the removal of one small tree (5 to 18 inches): two 24-inch boxed trees or three 15-gallon trees.

- For the removal of 1 medium tree (18 to 24 inches): three 24-inch boxed trees or four 15-gallon trees.
- For the removal of a tree larger than 24 inches: four 24-inch boxed trees or five 15-gallon trees.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measure 3.4-1b would reduce the potential for oak woodland habitats that occur near the Project site (i.e., outside of impact areas) to be adversely affected by the introduction and/or spread of invasive species or *Phytophthora*. Implementation of Mitigation Measure 3.4-16 would reduce impacts to oak woodlands by compensating for loss of this habitat type, both through planting of new oaks and preservation of existing oak woodlands. Implementation of Mitigation Measure 3.4-1c will further reduce impacts on oak woodlands by training Project personnel on these habitats and measures necessary to avoid and minimize impacts. Collectively, implementation of these mitigation measures would reduce impacts on oak woodlands to less-than-significant levels by ensuring that there is no net loss of the extent of these habitats.

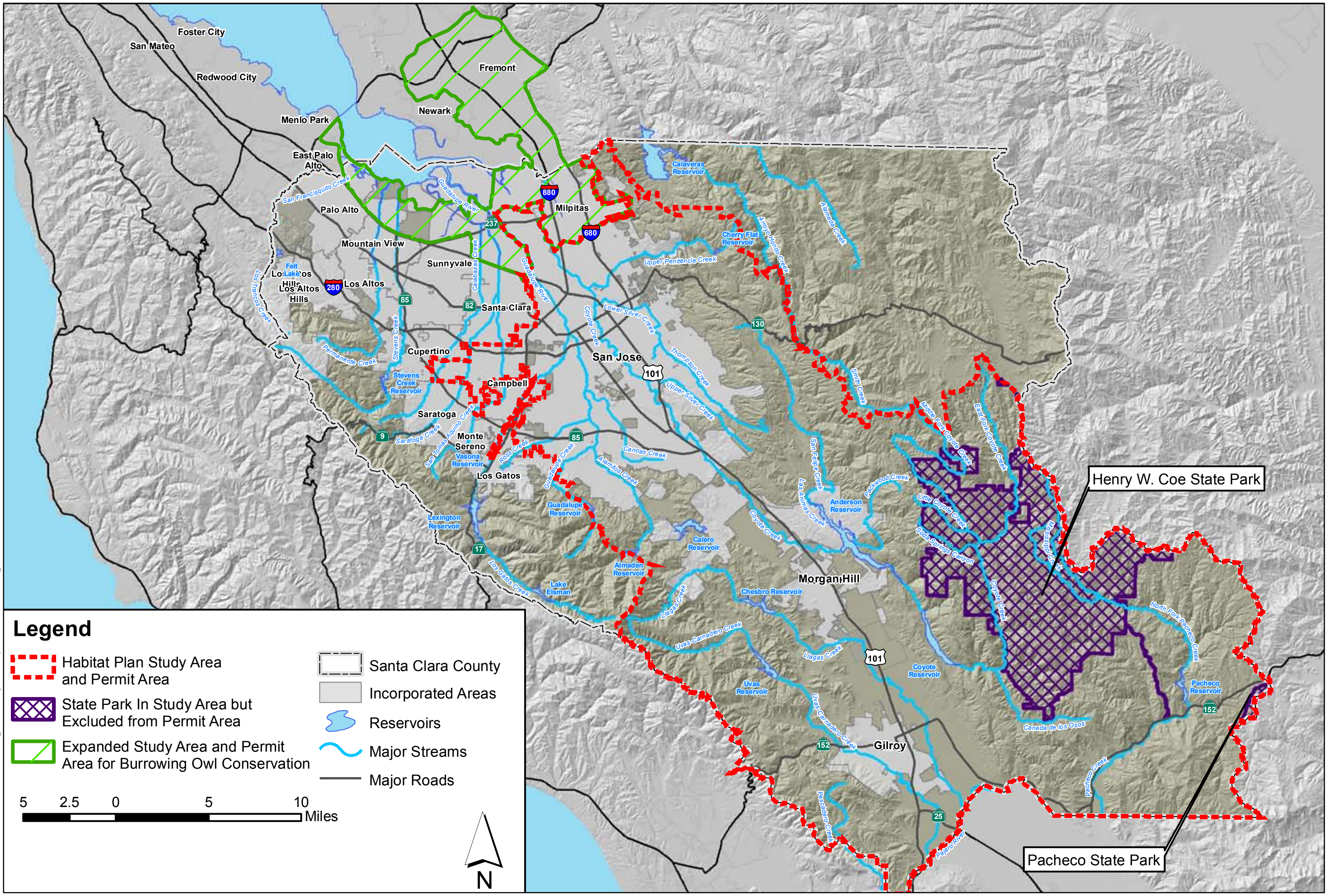
3.4.4.4 Cumulative Analysis

The geographic scope for assessing cumulative impacts on biological resources is the VHP Study Area and Permit Area shown on **Figure 3.4-9**. The VHP Final Environmental Impact Report/Environmental Impact Statement (ICF International 2012) evaluated the direct and cumulative effects of covered activities (proposed action) and other projects identified within the VHP Study Area/Permit Area on the species and critical habitat covered by the plan. Although the proposed Project is not a covered activity, it is located with the Study Area/Permit Area, and the impact statements above evaluated effects on many of the same species and critical habitat covered by the plan.

This EIR identifies nine projects for the Sargent Quarry cumulative scenario (see Table 3.1-1). Of these projects, the U.S. 101 Widening Project, which is also located in the VHP Study Area/Permit Area, has the most potential to combine with the proposed Project to cause cumulative impacts. Segments of that Project are located near to the proposed Project and would also have similar impacts on biological resources.

Impact 3.4-17: The Project activities could contribute to the cumulative loss of special-status plant species. (Less than Significant with Mitigation)

The Project area provides suitable habitat for 10 special-status plant species, as shown previously in Table 3.4-2. The VHP did not evaluate these species, and therefore they are not covered by the VHP. The status of 9 of the 10 plants is CRPR 4, which are plants that are on a watch list because of their limited distribution. The status of one of the 10 species—Congdon's tarplant—is CRPR 1B. Plants with this status are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century.



SOURCE: ICF International

SCC Sargent Quarry

Figure 3.4-9
Santa Clara Valley Habitat Plan Study Area and Permit Area

ESA

SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

Congdon's tarplant is endemic to Central California, in San Luis Obispo, Monterey, Santa Clara, Santa Cruz, San Mateo, Alameda, Contra Costa, and Solano (presumably extirpated) counties (CNPS 2013). Much of the former habitat for this plant was lost to early agricultural conversion; more recently, urban expansion has threatened populations near San Jose, in the Livermore Valley, and in San Luis Obispo, the latter where restoration have been conducted (Sanders 2004).

The Final EIR for the U.S. 101 Widening Project assessed nine special-status plants for their potential to occur within the Project's biological study area. The U.S. 101 Widening Project Final concluded that the habitat is of poor quality. Protocol-level, blooming period surveys were conducted during 2007 and 2008 for all 9 species, and none were detected in the study area. The Final EIR concluded that the Project would not impact any special-status plant species. However, given the regional decline in rare plant species and the fact that most of these species are not covered by the VHP, the cumulative impact with respect to the adverse effects on special-status plant species listed in Table 3.4-2 is significant.

Project Contribution

Although none of species listed in Table 3.4-2 has been detected in the Project area, no focused surveys for these species have been performed on the Project site or immediate surrounding area. Therefore, these species could be present in the Project area. If present, these species could be impacted by the Project as described below. Ground-disturbing activities associated with construction of the processing plant, conveyor belt, rail spur, roadway improvements, bridges over Tar Creek and Sargent Creek, and stormwater drainage facilities could damage or destroy special-status plants, if present. Proposed Project activities may affect these plants through direct disturbance of vegetation and disturbance, modification, or destruction of habitat, and may affect them indirectly through damage to underground root structures. Equipment use, vehicle traffic, and worker foot traffic may result in the injury or mortality of individual plants. These activities also could result in altered growth or reduced seed set. Grading may result in the mechanical or physical removal of vegetation and modification of the seed bank. Furthermore, proposed Project activities may include the refueling of equipment on location, and fuel or oil spills may occur during refueling. Dust generated by construction activities could coat vegetative and floral surfaces, interfering with normal gas exchange, photosynthesis, or pollination.

Project operations could also impact special-status plants. The greatest potential for impacts on special-status plants would occur during mining and stockpiling; if any such species are present within the mining footprint, the geotechnical setbacks (if those areas are impacted), or the permanent overburden stockpile area, those plants would be destroyed when mining of occupied habitat or deposition in the stockpile area occurs. Special-status plants could also be impacted by clearing of fire protection zones. Where roads, the conveyor belt, the rail spur, and the processing plant have been constructed, no direct impacts on special-status plants are likely to occur during operations, as the construction activities would have destroyed any individuals present within the construction footprints. However, indirect impacts may occur from mining, stockpiling, and use of roads, the conveyor belt, the rail spur, and the processing plant. During refueling of equipment, fuel or oil spills may occur. Dust generated by mining, vehicular activities, use of the conveyor belt, and processing activities could coat vegetative and floral surfaces in nearby areas, interfering with normal gas exchange, photosynthesis, or pollination. Special-status plants and their habitats could also be degraded by the introduction or spread of invasive plants and *Phytophthora* as described for construction activities above. Because there is a possibility that special-status plants may be located in the Project area that Project activities could destroy, the Project's contribution would be cumulatively considerable, and would be **significant**.

Mitigation Measure 3.4-17: The Applicant shall implement Mitigation Measures 3.4-1a, b, and c.

Significance after Mitigation: Less than significant.

Implementation of this mitigation measure would reduce Project impacts on special-status plants to less-than-cumulatively considerable and less-than-significant levels by determining whether special-status plants are present in impact areas, avoiding or minimizing impacts to special-status plants to the extent feasible, compensating for any impacts that cannot be avoided through the preservation and management of existing populations of the affected species, and preventing the introduction and/or spread of invasive species or *Phytophthora*.

Impact 3.4-18: The proposed Project could contribute to cumulative increases in nitrogen emissions that could result in adverse effects on habitat for the Bay checkerspot butterfly and rare serpentine-associated plants located off-site. (Less than Significant)

The VHP identified nitrogen deposition from urban and rural development in the Plan Area and a lack of land management techniques as a significant threat to Bay checkerspot habitat and serpentine plants. The EIR-EIS identified other conservation activities in the Plan Area as well as the High-Speed Rail as contributing to the cumulative effect. It was concluded that cumulative impacts would be minor, however, because most of the remaining serpentine grassland land cover types would be acquired, managed, and monitored as part of the Reserve System with implementation of the VHP. To the extent that projects listed in Table 3.1-1, Cumulative Projects List, are not covered by the VHP, they would be subject to environmental review of their contribution to increases in nitrogen emissions and adverse effects on habitat, and mitigation would be required to reduce these impacts. Therefore, the cumulative impact with respect to the adverse effects of nitrogen emissions on Bay checkerspot butterfly habitat and serpentine plants is not significant.

Project Contribution

The proposed Project would generate nitrogen emissions from combustion of diesel fuel used in trucks and construction/mining equipment. However, as discussed in Impact 3.4-2 relatively low amounts of nitrogen would be emitted during the Project's construction activities. Due to the directionality of the prevailing winds (which would carry most emissions away from serpentine communities supporting the Bay checkerspot butterfly and special-status plants), the dissipation of that nitrogen as it is carried from the Project site to serpentine communities, and the relatively low concentrations of nitrogen deposition that would occur in any given area of serpentine habitat as a result of this Project, nitrogen emissions from the Sargent Quarry Project (on a Project-specific basis) would not result in any substantive impacts on serpentine communities by facilitating growth of non-native grasses that could compete with special-status serpentine plants and with Bay checkerspot host plants. Therefore, the proposed Project would not contribute substantially to cumulative increases in nitrogen emissions that could result in adverse effects on habitat for the Bay checkerspot butterfly and rare serpentine-associated plants located off-site. The Project's contribution would not be cumulatively considerable, and the cumulative impact would be **less than significant**.

Mitigation: None required.

Significance: Less than significant.

Impact 3.4-19: Project activities could contribute to a cumulative degradation of habitat for special-status fish. (Less than Significant with Mitigation)

The EIR-EIS for the VHP identified urbanization and associated infrastructure development as causing past and ongoing impacts to riverine and riparian habitat for the South-Central California Coast steelhead and Monterey roach in the Study Area. Steelhead spawning has been heavily impacted by the loss of habitat associated with the construction of dams, which blocked access to high quality spawning habitat. Operation of these flood control projects has substantially altered downstream flows such that suitable instream spawning and habitat has been substantially degraded.

To the extent areas of suitable habitat existed in the Study Area prior to the development of flood control infrastructure, it is likely that most of those areas have been substantially altered by reservoir operations that emphasize the conveyance of flood flows. Increased loss of suitable habitat, however, is unlikely to occur because no additional conversions of natural stream channels and no additional dam or reservoir construction projects are proposed within the Study Area. Urban development and related activities also have caused a variety of other adverse effects including reduced channel complexity, loss of riparian vegetation, and reduced water quality from sediment. Special-Status fish species present in streams in the Study Area have been forced to spawn in areas of poor quality habitat. Although the projects listed in Table 3.1-1, Cumulative Projects List, would not directly affect habitat for Special-Status fish species, such as the Pajaro River, they could indirectly affect this habitat by degrading water quality via construction-related stormwater runoff.

The Final EIR for the U.S. 101 Widening Project concluded that removal of vegetation in shaded riverine habitat at the Pajaro River, Sen Benito River, and Carnadero Creek areas during construction would adversely affect Pacific Lamprey and Monterey Roach by reducing habitat quality within and downstream of affected stream reaches due to slightly increased water temperature and reduction in inputs of organic matter and coarse wood debris. Mitigation was identified to reduce these impacts to a less-than-significant level. However, because of the past development described above, the cumulative impact on habitat for special-status fish is significant.

Project Contribution

As discussed under Impact 3.4-3 above, the proposed Project would have adverse impacts on steelhead, Monterey roach, Monterey hitch, or their habitat (including steelhead critical habitat) through release of chemicals and erosion and sedimentation during construction of the Sargent Creek Bridge and from similar but less direct effects from construction of access roads, the conveyor belt, and the processing plant. Operation of Project facilities (i.e., processing plant, screening berm, and mining pits) have the potential for indirect impacts from sediment or pollutants in stormwater to enter waterways containing special-status fish; however, stormwater would collect within settling ponds and would ultimately percolate into the ground, be reused for processing plant operations, or evaporate. Swales would buffer overburden stockpiles and the processing plant area from Tar Creek to the west and prevent stormwater from the Project area from entering the creek. For these reasons, the Project's impact would be cumulatively considerable, and the cumulative impact would be **significant**.

> **Mitigation Measure 3.4-19:** The Applicant shall implement Mitigation Measure 3.4-3.
>
> **Significance After Mitigation:** Less than significant.
>
> Implementation of Mitigation Measures 3.4-3 and 3.4-1c, as well as any additional permit and wildlife agency consultation requirements and conditions, would reduce Project impacts to steelhead (including critical habitat for the species), Monterey roach, and Monterey hitch to less-than-cumulatively considerable and less-than-significant levels by minimizing impacts of construction and operation on water quality so that no individuals are lost as a result of water-quality impacts, and so that these species' habitat is not lost or degraded to the point of resulting in declines in these species' populations, and by training project personnel.

Impact 3.4-20: Project activities could contribute to cumulative harm to protected terrestrial species and loss of their habitats. (Less than Significant with Mitigation)

As discussed in Impacts 3.4-4 through 3.4-13, project activities would result in the injury or mortality of individuals of terrestrial species, including CRLF, CTS, western pond turtle, burrowing owl, tricolored blackbird, special-status and protect birds, special-status bats, mountain lion, San Francisco dusky-footed woodrat, and American badger. In addition, the project site contains several types of habitat that could support these species. Those same impacts have occurred and may occur in the future within the VHP Plan Area. Within the Permit Area, causes of population decline for these species include nesting and foraging habitat loss due to urban and agricultural development, predation by non-native species, and lack of genetic diversity in specific areas as a result of human population growth and barriers that restrict connectivity.

Within the Plan Area, the VHP would preserve, restore, and/or create breeding and foraging habitats for the terrestrial species listed above through a reserve system funded by impact fees paid by covered projects. In addition, the VHP contains various other measures that would minimize direct and indirect impacts to these habitats, improve connections between areas of adjacent habitat, and increase the size and viability of breeding populations

The U.S. 101 Widening Project between Gilroy and the interchange with SR 129 could result in the temporary and permanent loss of habitat for these terrestrial species through construction activities in or adjacent to wetlands and aquatic habitat at Tar Creek and the Pajaro River in the vicinity of the proposed Sargent Quarry as well as in grassland, agricultural land, coyote brush scrub, and oak woodland that may serve as upland habitat. The EIR for the project also concluded that construction activities could cause the destruction or disturbance of nests for several of the species. Mitigation measures were identified that would reduce construction impacts to a less-than-significant level. In addition, the U.S. 101 Widening Project is a "covered Project" under the VHP. As such, it would pay fees for habitat loss and be implement the plan's conditions designed to avoid and minimize take of covered species. Therefore, due to the beneficial effects of VHP on terrestrial species and their habitat described above, and the less-than-significant impact of the U.S. 101 Widening Project on this species, the cumulative impact with respect to the harm to protected species and loss of their habitats would be **less than significant**.

Project Contribution

Project construction activities would result in the injury or mortality of individual animals of terrestrial species, as discussed in Impacts 3.4-4 through 3.4-13. Indirect impacts to several of these species, including CRLF, CTS, and western pond turtle, and their habitat could also result from impacts to water quality. Water-quality impacts could include reduction in the suitability of aquatic foraging habitat, which could reduce prey abundance, and pollutants could affect the health of these species and their prey. Construction activities may result in the injury or mortality of individuals as a result of worker foot traffic, equipment use, or vehicle traffic. Substrate vibrations may cause individuals to move out of refugia, exposing them to a greater risk of predation. Movement of Project personnel and equipment within the site, and between on-site and off-site areas, could also spread pathogens such as chytrid fungus, which can impair the health of amphibians such as CRLF. Bridge construction would result in the direct loss of suitable riparian (CRLF) and upland dispersal habitat (CRLF, CTS, and western pond turtle). Construction would also result in the loss of foraging and roosting habitat for burrowing owls, tricolored blackbirds, special-status and protected birds, special-status bats, mountain lions, San Francisco dusky-footed woodrats, and American badgers.

During mining operations and reclamation, individuals could be adversely affected in the same ways described above for construction activities. For example, individuals could be injured or killed by foot traffic, equipment, and vehicles, both during new groundbreaking in mining pits, during mining activities, and during movement of people around the site. Project operations would also result in the loss of nesting habitat (e.g., oak woodland) and upland habitat (e.g., grassland) used for dispersal and refuge. For these reasons, the Project's contribution to this cumulative impact would be considerable; therefore, the cumulative impact would be **significant.**

> **Mitigation Measures 3.4-20:** The Applicant shall implement Mitigation Measures 3.4-1c, 3.4-4a through 3.4-4c, 3.4-5a and 3.4-5b, 3.4-6, 3.4-7, 3.4-8a and 3.4-8b, 3.4-9, 3.4-10a and 3.4-10b, 3.4-11, 3.4-12a and 3.4-12b, and 3.4-13.
>
> **Significance After Mitigation:** Less than significant.

Implementation of these mitigation measures, as well as any additional permit and wildlife agency consultation requirements and conditions, would reduce impacts on terrestrial species to less-than-cumulatively considerable and less-than-significant levels by minimizing impacts of construction and operation on water quality so that no individuals are lost as a result of water-quality impacts; avoiding and minimizing injury or mortality of individual animals, and impacts on this species' habitat, during construction and operations; reducing the potential for pathogens such as chytrid to be introduced and/or spread during construction and operational activities; and compensating for impacts to habitat so that the Project does not cause a net reduction in the populations of terrestrial species.

Impact 3.4-21: The Project activities could contribute to the cumulative loss of jurisdictional wetlands, other waters, and riparian habitats. (Less than Significant with Mitigation)

According to CDFW, California has lost more than 90% of its historical wetlands with threats remaining to many existing wetlands. Wetlands continue to be drained for agriculture, filled for development, or disturbed by modifications to the watershed such as dams or water diversions. The VHP has identified approximately 583 acres of wetlands in the permit area. Under the VHP, no more than 92 acres of wetlands and ponds could be developed. Habitat Condition 12 would require 2 acres of wetlands (perennial, seasonal, and ponds) to be preserved and enhanced for every 1 acre of impact. The VHP also contains various other measures that would improve connections between wetlands and areas of adjacent habitat implemented.

The U.S. 101 Widening Project would result in the removal of wetland and aquatic habitat due to relocation of bridge abutments and piers, addition of new bridge abutments and piers, and shifting of road alignments and associated fill in the vicinity of the proposed Sargent Quarry Project. The potential for temporary, non-fill impacts during construction were also identified. The U.S. 101 Widening Project would pay development fees to the VHP for impacts to wetlands and aquatic habitat. In addition, temporary impacts would be mitigated through restoration of pre-construction grades, hydrology, and soil conditions at the location of the impact to wetland and aquatic areas temporarily disturbed during construction. Therefore, due to the beneficial effects of VHP on wetlands and riparian habitat described above, and the less-than-significant impact of the U.S. 101 Widening Project on these habitat types, the cumulative impact with respect to loss of jurisdictional wetlands, other waters, and riparian habitats is not significant.

Project Contribution

The Project area supports jurisdictional wetlands and other waters (i.e., ponds, creeks, and drainages) that may be regulated by the USACE under Section 404 of the CWA and the RWQCB under Section 401 of the CWA and under the Porter-Cologne Water Quality Control Act. These are all sensitive habitats, as most such wetland, aquatic, and riparian habitats contribute disproportionately to biodiversity by supporting many plant and animal species. The Project has been designed to avoid direct and indirect impacts to the most extensive and sensitive aquatic features on the Sargent Ranch (shown in Figure 3.4-3). With the exception of the bridge, road, and conveyor belt crossings, impacts to Sargent Creek and Tar Creek would be avoided with a minimum 150-foot setback. Construction of the bridge, road, and conveyor belt crossings over Tar Creek and Sargent Creek would result in the loss of woody riparian habitat and may result in temporary disturbance of jurisdictional waters within those creeks (e.g., as a result of the movement of construction personnel and equipment). However, permanent impacts to the creeks would be avoided with the use of a clear-span bridge over Tar Creek and an arch culvert over Sargent Creek. Construction would not be able to avoid impacts to all wetlands and intermittent and ephemeral drainage channels, and construction of the conveyor belt and access road to Phases 3 and 4 would impact intermittent and ephemeral drainages within the Phase 1, 2, and 4 mining areas

Operational activities would also result in impacts on jurisdictional wetlands, other waters, and riparian habitats. Intermittent and ephemeral drainages within Phase 1, 2, and 4 mining areas, as well as the permanent overburden stockpile area, would be lost as a result of mining activities. The geotechnical setback areas for Phases 1 and 2 also support hydrologic features that may also be considered jurisdictional by the USACE and/or RWQCB, including wetland seeps, a short reach of intermittent channel, a stock pond, and a small seasonal wetland north of the Phase 2 area. Although it is unknown whether these geotechnical setbacks would need to be disturbed, they may be impacted if slope failures expand the mining excavation areas into the setbacks. For these reasons, the Project's contribution to this cumulative impact would be considerable, and the cumulative impact would be **significant**.

Mitigation Measures 3.4-21: The Applicant shall implement Mitigation Measures 3.4-1c, 3.4-14a and 3.4-14b.

Significance After Mitigation: Less than significant.

Implementation of these mitigation measures would reduce the potential for riparian habitats that occur near the Project site (i.e., outside of impact areas) to be adversely affected by the introduction and/or spread of invasive species or *Phytophthora*, minimize the indirect impacts of construction and operational activities on water quality and on these habitats, compensate for unavoidable impacts to jurisdictional habitats, and riparian habitats along Sargent Creek that occur as a result of a reduction in flow reaching these habitats during Phase 3 and 4 mining. Implementation of these mitigation measures would reduce Project impacts on wetlands, other waters, and riparian habitats to less-than-cumulatively considerable and less-than-significant levels.

Impact 3.4-22: The Project activities could contribute to the cumulative impairment of wildlife crossings. (Significant and Unavoidable)

Preserving regional wildlife linkages is one of the biological goals and objectives of the VHP. The reserve system has been designed to protect key linkages described in the plan. The VHP also includes additional conservation actions to promote species movement within and between natural communities within and outside of the Study Area, focusing on five geographic areas, including movement across U.S. Highway 101 and other barriers in the following areas between Gilroy and the county line (Habitat Plan Linkages 18, 19, and 20).

The Final EIR for the U.S. 101 Widening Project identified the most significant wildlife movement area as Tar Creek south to the San Benito River. Replacement of culverts currently used by wildlife as part of the widening of the highway would increase the length and there decrease the openness ratios of these culverts, which may discourage some individual animals from moving through these culverts. Mitigation to reduce this impact to a less-than-significant level includes installation of new box culverts south of Tar Creek to provide additional passages for wildlife to cross under U.S. 101, installation of wildlife fencing from Tar Creek south to the San Benito River to minimize wildlife access to the highway's surface, and use of metal grating on lengthened culverts to increase light within the culverts. Therefore, due to the beneficial effects of VHP on wildlife linkages, and the less-than-significant impact of the U.S. 101 Widening Project on wildlife movement, the cumulative impact with respect to the cumulative impairment of wildlife crossings is not significant.

Project Contribution

As described in Section 3.4.3.5 and shown in Figure 3.4-7, the Project is located within an area of important habitat connectivity for wildlife, providing landscape linkages and genetic exchange for species between the Santa Cruz Mountains and Diablo Range, and between these mountain ranges and the Lomerias Muertas and Gabilan Range. Within the Project site itself, wildlife is currently able to move relatively easily among virtually any portions of the Project site on the west side of U.S. 101. Although some impediments to wildlife movement within the site currently exist, such as the densely-stranded barbed wire fencing along the UPRR tracks and the occupied residence and dogs near Tar Creek, habitats on the Project site are conducive to wildlife movement because of the absence of roads, extensive structures, or other features that represent substantial impediments to wildlife movement.

Construction activities could interfere with wildlife movement in several ways. Construction vehicles accessing the site along Old Monterey Road could disturb animals attempting to move toward or away from U.S. 101 (e.g., in the vicinity of the Tick Creek undercrossing), and could pose some collision risk. The noise and movement of construction vehicles, personnel, and equipment on the rest of the Project site (such as would be present during construction of bridges over Tar Creek and Sargent Creek, access roads, road improvements along Old Monterey Road and at its junction with U.S. 101, the conveyor belt, the rail spur, and the processing plant) could also disturb animals, causing them to divert around the work areas or suspend their dispersal activity until construction activity is not occurring.

Operational activities could interfere with wildlife movement in several ways:

- disturbance of animals by vehicles, personnel, and equipment;
- vehicular collisions;
- discouragement of animal activity as a result of night lighting at the processing plant;
- physical impediments posed by the conveyor belt and processing plant; and

- loss of vegetative cover for dispersing animals.

Owing to the physical location of the processing plant, coupled with its close proximity to the Tar Creek/UPRR undercrossing of U.S. 101 (approximately 330 feet away), the main plant would occupy a large proportion of the area immediately west/southwest of the undercrossing. Animals that currently move through the fields where the processing plant is proposed, including the screening berm between the processing plant and the railroad tracks and the proposed rail spur (refer to Figure 2.4-2), would need to move around the processing plant once constructed. There would still be space north, east, and south of the processing plant through which animals could move, but the plant would occupy a large area of open space immediately adjacent to the undercrossing. For these reasons, the Project's contribution to this cumulative impact would be considerable, and the cumulative impact would be **significant**.

Mitigation Measure 3.4-22: The Applicant shall implement Mitigation Measure 3.4-15.

Significance After Mitigation: Significant and Unavoidable.

Implementation of this mitigation measure would reduce impacts of the Project on wildlife movement by minimizing constraints to wildlife movement posed by Project fencing; minimizing disturbance of animals and alteration of movement patterns as a result of lighting; providing animals the ability to move under the Tar Creek bridge; reducing for collisions between Project-related vehicles and animals; and ensuring that even the largest animals that occur on the site can move under the conveyor belt. The Project's operational lifespan is 30 years; by 2052, the conveyor belt and processing plant would have been removed, and by 2057, the Project's mining pits would all have been reclaimed (with Pits 1, 2, and 3 having been reclaimed even earlier). However, the various ways in which Project operations might reduce the degree to which animals can safely traverse U.S. 101 would reduce the frequency of successful crossings. Given the location of the Project site, in an area where movement of animals in multiple directions and among multiple populations is very important, a reduction in the frequency of successful crossings over a 30 to 35-year period would have implications for regional movements, gene exchange, and potentially population viability.

Impact 3.4-23: The Project activities could contribute to the cumulative loss of oaks and oak woodlands. (Less than Significant with Mitigation)

Oak woodlands are one of the most widespread habitats in Santa Clara County, and various species of oaks are among the most abundant and widespread trees in the county. The VHP identified six different oak woodland land cover types, varying by dominant oak species and the abundance of co-dominant non-oak trees. Oak woodlands have been reduced in extent, and often fragmented, by clearing and other land use activities, but they still occupy 156,930 acres (34.2%) of the VHP's Plan Area.

The VHP covers permanent impacts to up to 2,709 acres of oak woodland. Within the Plan Area, the VHP would enhance or restore 12,900 acres of oak woodland within a reserve system funded by impact fees paid by covered projects. In addition, the VHP contains Condition 14 to avoid and minimize impacts on two of the most limited and sensitive oak woodland land cover types, valley oak and blue oak woodland. The vast majority of projects that will impact oak woodlands in Santa Clara County would be VHP-covered projects. Those projects would be required to comply with Condition 14, as applicable, to avoid and minimize impacts on valley oak and blue oak woodland, and they would pay impact fees. Those fees would be used to implement the VHP's conservation program, which would preserve, enhance, and restore oak woodlands, among a number of other habitats.

However, some oak woodlands are not included in VHP boundaries, and loss of oaks and oak woodlands in these areas, combined with the Project's incremental impacts, would result in a **significant** cumulative impact.

Project Contribution

Collectively, Project construction and operational activities would result in the loss of up to 40.4 acres of oak-dominated woodlands, including coast live oak forest and woodlands and mixed riparian woodland dominated by oaks. The Project's contribution to cumulative impacts to oak trees and oak woodlands would be cumulatively considerable, and therefore **significant**.

> **Mitigation Measures 3.4-23**: The Applicant shall implement Mitigation Measures 3.4-1b, 3.4-1c, 3.4-16a, and 3.4-16b.
>
> **Significance After Mitigation:** Less than significant.
>
> Implementation of Mitigation Measure 3.4-1b would reduce the potential for oak woodland habitats that occur near the Project site (i.e., outside of impact areas) to be adversely affected by the introduction and/or spread of invasive species or Phytophthora. Implementation of Mitigation Measure 3.4-16a and 3.4-16b would reduce impacts to oak woodlands by compensating for loss of this habitat type, both through planting of new oaks and preservation of existing oak woodlands. Implementation of Mitigation Measure 3.4-1c would further reduce impacts on oak woodlands by training Project personnel on these habitats and measures necessary to avoid and minimize impacts. Collectively, implementation of these mitigation measures would reduce impacts on oak woodlands to less-than-cumulatively-considerable and less-than-significant levels by ensuring that there is no net loss of the extent of these habitats.

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3.5 Cultural and Tribal Cultural Resources

3.5.1 Introduction

This section evaluates impacts of the Project on known and unknown cultural and tribal cultural resources (, including those of historical, archaeological, paleontological, and ethnographic importance. The discussion within this section is based on several technical reports, including archaeological and historic reports and data sheets prepared by Far Western Anthropological Resources Group, Inc. in January 2017 and December 2017 (Far Western 2017a and 2017b), as well as a confidential ethnographic study prepared by Albion Environmental dated September 2021 and a memo attached to the study, prepared in 2022 (Albion 2021). Locations of archaeological sites and tribal cultural resources as well as information exchanged during the AB 52 consultation contained in these reports are confidential and not available for public review pursuant to CEQA Guidelines section 15120(d). The non-confidential portions of the Far Western reports are provided in Appendix M.

For the purposes of this section, the term "ethnographic study area" includes the Sargent Hills and associated riverine lowlands, as shown in **Figure 3.5-1**. The term "Project site" includes the area being physically impacted by the Project as a result of ground disturbing activities (i.e., mining pits, access roads, conveyor belt footprint, screening berms, stockpile areas, processing plant, etc.). These areas are shown in Figure 2-2 in Chapter 2, *Project Description*.

3.5.2 Regulatory Setting

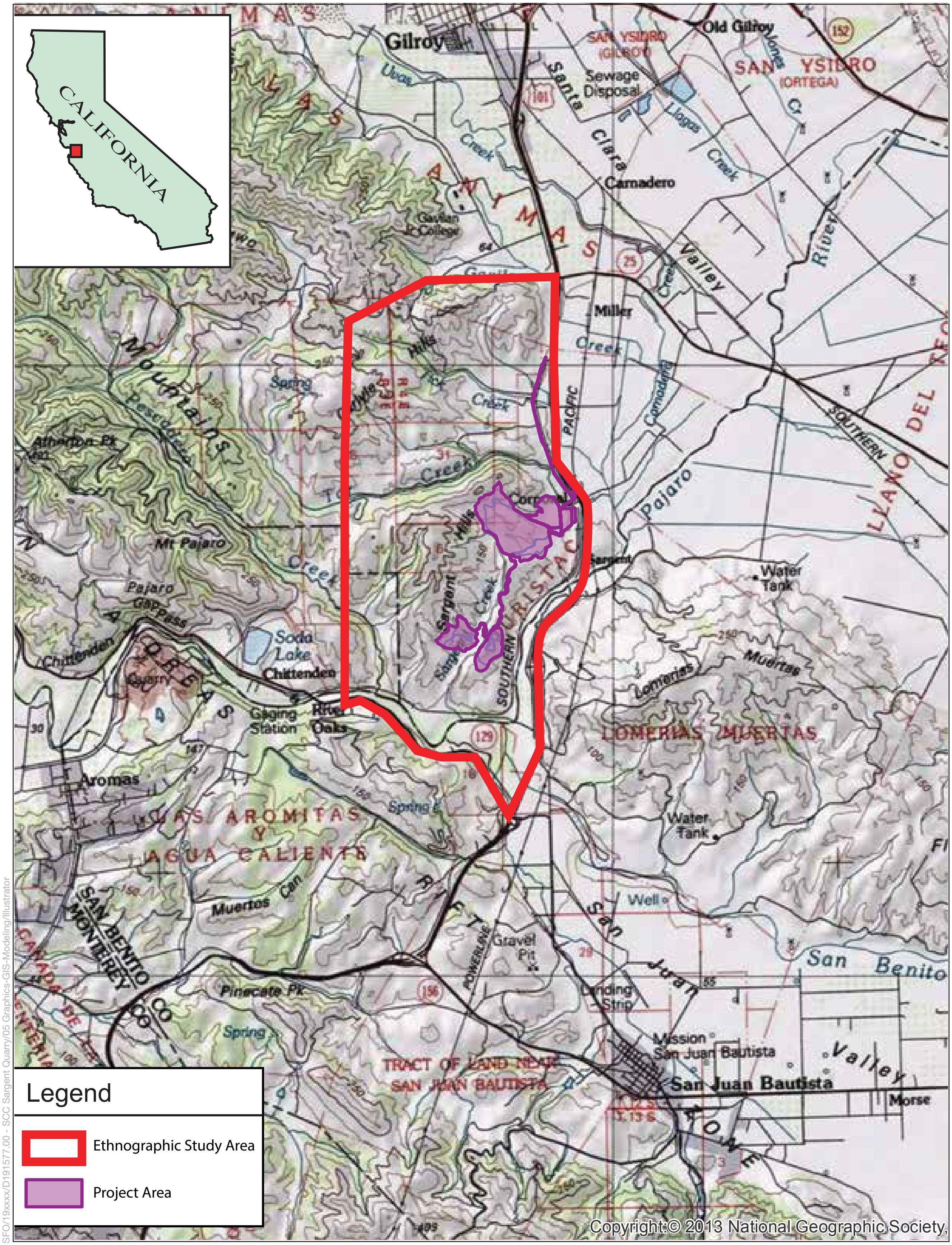
3.5.2.1 Federal

National Historic Preservation Act

Federal protection is legislated by the National Historic Preservation Act (NHPA) of 1966. These laws maintain processes for determination of the effects on historical properties eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA and related regulations (36 Code of Federal Regulations Part 800) constitute the primary federal regulatory framework guiding cultural resources investigations and require consideration of effects on properties that are listed or eligible for listing in the NRHP. Impacts to properties listed in the NRHP must be evaluated under CEQA.

The NRHP is the nation's master inventory of historic resources that are considered significant at the national, state, or local level. The minimum criteria (36 Code of Federal Regulations Part 60.4) for determining NRHP eligibility follow:

- The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);
- It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and



SOURCE: Live Oak Associates, Inc.

SCC Sargent Quarry

Figure 3.5-1
Ethnographic Study Area

ESA

- It possesses at least one of the following characteristics:
  - Association with events that have made a significant contribution to the broad patterns of history.
  - Association with the lives of persons significant in the past.
  - Distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction.
  - Has yielded, or may yield, information important to prehistory or history.

3.5.2.2 State

California Environmental Quality Act

CEQA has several provisions related to the cultural resources impacts and mitigation measures.

CEQA Guidelines Section 15064.5(a) - Definition of a Historic Resource

CEQA Guidelines Section 15064.5(a) defines a "historic resource" as follows:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code Section 5024.1, Title 14 CCR, Section 4850 et seq.).

(2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code Section 5024.1, Title 14 CCR, Section 4852) including the following:

    (A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

    (B) Is associated with the lives of persons important in our past;

    (C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

    (D) Has yielded, or may be likely to yield, information important in prehistory or history.

CEQA Guidelines Section 15064.5(b) - Definition of A Substantial Adverse Change in a Historical Resource

CEQA Guidelines Section 15064.5(b) defines a "substantial adverse change" in the significance of a historic resource as follows:

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

(3) Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource.

CEQA Guidelines Section 15064.5(c) - Effects on Archeological Sites

If a cultural resource in question is an archaeological site, the CEQA Guidelines (Section 15064.5[c][1] require that the lead agency first determine if the site is a historical resource as defined in Section 15064.5(a). If the archaeological site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource (CEQA Guidelines Section 15064.5[c][2]). If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological resource, then the archaeological site is treated in accordance with PRC Section 21083.2 (CEQA Guidelines Section 15064.5[c][3]). In practice, most archaeological sites that meet the definition of a unique archaeological resource also meet the definition of a historical resource.

CEQA (PRC Section 21083.2[g]) defines a unique archaeological resource as an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

- Contains information needed to answer important scientific research questions, and there is public information in that information.

- Has a special and particular quality, such as being the oldest or best example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

CEQA Guidelines Section 15126.4(b) - Mitigation Requirements for Archaeological Historical Resources

CEQA Guidelines Section 15126.4(b) contains the following requirements for mitigating impacts on historical resources that are archeological in nature, including the following:

(3) Public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

(A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is administered by the State Office of Historic Preservation and encourages protection of resources of architectural, historical, archeological, and cultural significance. The CRHR identifies historic resources for state and local planning purposes and affords protections under CEQA. Under Public Resources Code Section 5024.1(c), a resource may be eligible for listing in the CRHR if it meets any of the NRHP criteria listed previously.[1]

Historical resources eligible for listing in the CRHR must meet the significance criteria described previously and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR if it maintains the potential to yield significant scientific or historical information or specific data.

The concept of integrity is essential to identifying the important physical characteristics of historical resources and hence; in evaluating adverse changes to them. Integrity is defined as “the authenticity of an historical resource’s physical identity evidenced by the survival of characteristics that existed

[1] CEQA Guidelines Section 15064.5(a)(3) and California Office of Historic Preservation Technical Assistance Series #6. March 14, 2006.

during the resource's period of significance." The process of determining integrity is similar for both the CRHR and NRHP and use the same seven variables or aspects to define integrity that are used to evaluate a resource's eligibility for listing. These seven characteristics include 1) location, 2) design, 3) setting, 4) materials, 5) workmanship, 6) feeling, and 7) association.

Discovery of Human Remains

The California Native American Historical, Cultural, and Sacred Sites Act applies to both state and private lands. The act requires that upon discovery of human remains, construction, or excavation activity must cease and the County Coroner be notified. Pursuant to Public Resources Code Section 5097.98 and California Health and Safety Code Section 7050.5, no further disturbance is allowed until the County Coroner has made the necessary findings regarding the origin and disposition of the remains, and subsequent steps have been taken. If the remains are of a Native American, the coroner must notify the Native American Heritage Commission (NAHC). The NAHC then notifies those persons most likely to be related to the Native American remains. The act stipulates the procedures that the descendants may follow for treating or disposing of the remains and associated grave goods.

Section 15064.5(e) of the CEQA Guidelines specifies procedures to be used in the event of an unexpected discovery of Native American human remains. These procedures protect such remains from disturbance, vandalism, and inadvertent destruction, establish procedures to be implemented if Native American skeletal remains are discovered during construction of a project, and establish the NAHC as the authority to resolve disputes regarding disposition of such remains.

Both state law and County of Santa Clara Code (Section B6-189) require that the Santa Clara County Coroner be notified if cultural remains are found on a site. If the County Coroner determines the remains are those of Native Americans, the NAHC and a most likely descendant must also be notified.

Assembly Bill 52 Tribal Cultural Resources

Assembly Bill (AB) 52, effective July 1, 2015, established a new category of resources for consideration by public agencies when approving discretionary projects under CEQA, called tribal cultural resources. Public Resources Code Section 21074 (a), defines tribal cultural resources as either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are also either:

    (A) Included or determined to be eligible for inclusion in the CRHR[2]

    (B) Included in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)

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[2] See Public Resources Code section 5024.1. The State Historical Resources Commission oversees the administration of the CRHR and is a nine-member state review board that is appointed by the Governor, with responsibilities for the identification, registration, and preservation of California's cultural heritage. The CRHR "shall include historical resources determined by the commission, according adopted procedures, to be significant and to meet the criteria in subdivision (c) (Public Resources Code, Section 5024.1 (a)(b)).

(2) 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 Section 5024.1 (CRHR criteria described above). In applying the criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 requires lead agencies to provide notice of projects to tribes that are traditionally and culturally affiliated with the project's geographic area if they have requested to be notified, in writing, of projects in the geographic area that is traditionally and culturally affiliated with the tribe, and the tribe responds, in writing, within 30 days of receipt of the formal notification of a project and requests consultation (Public Resources Code, Section 21080.3.1.). [3]

As part of the consultation process, the parties may propose mitigation measures, including those capable of avoiding or substantially lessening potential significant impacts to a Tribal Cultural Resource or alternatives that would avoid significant impacts to a Tribal Cultural Resource (Public Resources Code Section 21080.3.2, 21084.3). Section 21080.3.2(b) provides: "The consultation process shall be considered concluded when either of the following occurs: (1) The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource. (2) A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached."

AB 52 Methodology

The identification of tribal cultural resources that might be affected by the proposed Project is based on the County's application of California Public Resources Code section 21074, after consulting with the Amah Mutsun Tribal Band. California Public Resources Code section 21074 defines a Tribal Cultural Resource as noted above in the "Assembly Bill 52 Tribal Cultural Resources."

There are no tribal cultural resources in the Project area that are included in a local register of historic resources; therefore, the evaluation of whether cultural resources meet the definition of tribal cultural resources in Public Resources Code section 21074 is based on the eligibility criteria for listing on the CRHR, which are set forth in Public Resources Code section 5024.1 (c). (Public Resources Code section 21074(a)(2)). Those criteria are whether the resource meets any of the following four criteria for listing on the CRHR:

(1) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(2) is associated with the lives of persons important in our past;

(3) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

[3] Consultation has the same meaning under AB 52 as provided in Government Code Section 65352.4: "consultation' means the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation between government agencies and Native American tribes shall be conducted in a way that is mutually respectful of each party's sovereignty. Consultation shall also recognize the tribes' potential needs for confidentiality with respect to places that have traditional cultural significance."

(4) has yielded, or may be likely to yield, information important in prehistory or history. (See also Title 14, Cal. Code Regs. Section 4852 (criteria for listing on the CRHR), and Section 15064.5(a)(3) of the CEQA Guidelines).

The lead agency must also consider the significance of the resource to the Tribe (Public Resources Code section 21074(a)(2)). PRC Section 21080.3.1(a) recognizes that California tribes may have expertise regarding tribal history and practices concerning the tribal cultural resources with which they are traditionally and culturally affiliated.

According to State Office of Historic Preservation Guidelines (California Code of Regulations, Title 14, Chapter 11.5, Section 4850 *et seq*), a "site" is a type of resource that may be eligible for nomination to the CRHR and is defined as follows:

> A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historical, cultural, or archeological value regardless of the value of any existing building, structure, or object. A site need not be marked by physical remains if it is the location of a prehistoric event, and if no buildings, structures, or objects marked it at that time. Examples of such sites are trails, designed landscapes, battlefields, habitation sites, Native American ceremonial areas, petroglyphs, and pictographs (Title 14, Cal. Code Regs. Section 4852(a)(2)).

The integrity of a resource is also an important factor in establishing significance. "Integrity is the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Historical resources eligible for listing in the California Register must meet one of the criteria of significance described in section 4852(b) of this chapter and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance" (Title 14, Cal. Code Regs. Section 4852(c)). An evaluation of integrity considers the retention of location, setting, design, materials, workmanship, association and feeling. These aspects are judged with reference to the particular criteria under which the resource is proposed for eligibility. Alterations to a resource or historic changes in its use may also have historical, cultural, or architectural significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR if it maintains the potential to yield significant scientific or historical information or specific data (Title 14, Cal. Code Regs. Section 4852(c)).

With respect to cultural landscapes, Public Resources Code Section 21074(b), provides: "A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape." California statutes and regulations do not provide specific guidance with respect to "sacred places."

Significance of a Project's Effects on a Tribal Cultural Resource

Pursuant to AB 52, "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (Public Resources Code Section 21084.2). A "substantial adverse change" is defined above. (CEQA Guidelines Section 15064.5(b)(1).)

Consideration of Mitigation Measures and Alternatives under AB 52

Any mitigation measures or alternatives that are agreed upon during the consultation process between the lead agency and the Tribe pursuant to Public Resources Code section 21080.3.2 that are capable of avoiding or substantially lessening the potential significant impacts to a Tribal Cultural Resource must be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, and shall be fully enforceable (Public Resources Code, Section 21082.3). If, however, the mitigation measures recommended by staff of the lead agency as a result of the consultation process are not included in the environmental document, or if there are no agreed upon mitigation measures at the conclusion of the consultation, "and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to subdivision (b) of Section 21084.3" (Public Resources Code, Section 21082.3(e)).

Public Resources Code section 21084.3(a) requires public agencies to avoid damaging effects to any Tribal Cultural Resource, when feasible. Section 21084.3(b) provides that: "If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Section 21080.3.2, the following are examples of mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impacts:

(1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

(2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

    (A) Protecting the cultural character and integrity of the resource.

    (B) Protecting the traditional use of the resource.

    (C) Protecting the confidentiality of the resource.

(3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

(4) Protecting the resource.

AB 52 Consultation Summary

AB 52 requires lead agencies to provide notice of projects to tribes that are traditionally and culturally affiliated with the project's geographic area if they have requested to be notified, in writing, of projects in the geographic area that is traditionally and culturally affiliated with the tribe, and the tribe responds, in writing, within 30 days of receipt of the formal notification of a project and requests consultation (Public Resources Code, Section 21080.3.1.).[4]

As part of the consultation process, the parties may propose mitigation measures, including those capable of avoiding or substantially lessening potential significant impacts to a Tribal Cultural Resource or alternatives that would avoid significant impacts to a Tribal Cultural Resource (Public Resources Code Section 21080.3.2, 21084.3). Section 21080.3.2(b) provides: "The consultation process shall be considered concluded when either of the following occurs: (1) The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource. (2) A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached."

For this Project, the County of Santa Clara received a request for consultation under AB 52 from the Amah Mutsun Tribal Band of Costanoan/Ohlone Indians in October 2016. The following table summarizes the consultation activities that occurred between the Tribe and the County of Santa Clara as part of the consultation process (**Table 3.5-1**).

Following conclusion of the consultation in December 2019,[5] the County determined that additional information was needed from the Tribe to complete the environmental analysis. An additional interview was conducted with the Tribe on April 16, 2021. The Tribe provided written responses to the interview questions on May 13, 2021.

3.5.2.3 Local

County of Santa Clara Historic Preservation Ordinance

The Historic Preservation Ordinance, set forth in Division C17 of the County of Santa Clara Ordinance Code, is intended to identify, protect, preserve, and enhance historic resources representing distinctive historical elements (i.e., cultural, social, and economic) of Santa Clara County. The Historic Preservation Ordinance regulates landmark designations, landmark alterations, demolition of historical resources, and provides incentives for historic resource preservation. The County also maintains a list of identified historic resources and landmarks within the County's jurisdiction known as the heritage resource inventory.[6]

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4 Consultation has the same meaning under AB 52 as provided in Government Code Section 65352.4: "consultation' means the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation between government agencies and Native American tribes shall be conducted in a way that is mutually respectful of each party's sovereignty. Consultation shall also recognize the tribes' potential needs for confidentiality with respect to places that have traditional cultural significance."

5 The AB 52 consultation process concluded because, per Public Resources Code Section 21080.3.2, the County concluded after reasonable effort and acting in good faith, that mutual agreement could not be reached as to measures to mitigate or avoid significant effects on tribal cultural resources. The County fully considered the proposed mitigation measures submitted by the Tribe before reaching this conclusion. The Tribe maintained that impacts to tribal cultural resources cannot be fully mitigated.

6 Santa Clara County. Historic Resources Inventory. Accessed January 30, 2018. https://www.sccgov.org/sites/dpd/Programs/HistoricPreservation/Pages/Inventory.aspx.

TABLE 3.5-1
AB 52 CONSULTATION SUMMARY OVERVIEW

Consultation Action	Date
1. County receives Amah Mutsun Tribal Band Resolution No. 03-2016 opposing Sargent Quarry Project on "Unique Ancestral Tribal Lands at Juristac"	10/10/16
2. Letter received from Berkey Williams LLP on behalf of the Tribe requesting formal consultation under AB 52	10/13/16
3. Initial AB 52 consultation meeting to discuss EIR process and reports to be prepared, solicit feedback on potential impacts and mitigation measures	5/17/17
4. County receives comments from the Tribe on the draft archaeological resources report	6/5/17
5. First site visit with County staff, tribal representatives, the Project applicant, archaeologist, and ethnographer Far Western	6/15/17
6. Far Western contacted the NAHC and requested a Sacred Lands Search and Native American Contact List	9/18/17
7. County receives comments from the Tribe on the scope for the ethnographic study	10/5/17
8. Far Western notified parties on the County's interested parties list for the Project (including the Tribe) of the Project via letter; additional follow up was conducted via email and phone calls on 11/14/17 and 11/20/17	11/7/17
9. County receives letter from Shute, Mihaly &Weinberger, LLP (representing the Tribe) regarding the CEQA review process and potential cultural and biological resources issues	1/19/18
10. Second site visit with County staff, the Tribe, and ethnographer	2/13/18
11. County receives comments from the Tribe on the draft ethnographic study (Ethnohistory and Ethnographic Study of Juristac ("Sargent Ranch Project"))	7/6/18
12. County responds to Tribe's July 6, 2018 comments on draft ethnographic study	9/13/18
13. Tribe receives administrative draft of EIR Tribal Cultural Resources Section	9/13/18
14. Second AB 52 consultation meeting between the County and the Tribe to discuss the ethnographic study results, Project impacts, potential mitigation measures, alternatives, and the EIR process	9/20/18
15. County receives comments from the Tribe on administrative draft of EIR Tribal Cultural Resources Section, including archaeological resources and tribal cultural resources mitigation measures, and a request for a meeting with the County to discuss the Tribe's comments and requested mitigation measures	10/5/18
16. County sends revised draft archaeological resources and tribal cultural resources mitigation measures to the Tribe for review	11/20/18
17. Responses to Tribe's requests for mitigation measures sent by the County	11/27/18
18. Berkey Williams LLP, on behalf of the Tribe, sent the County, via e-mail, the Tribe's comments on the revised archaeological resources and tribal cultural resources mitigation measures and reiterated the Tribe's availability for a meeting to discuss the comments and requested mitigation measures.	12/4/18
19. Final AB 52 consultation meeting to discuss the EIR process and final comments on mitigation	10/8/19
20. County sends Tribe the revised administrative draft of EIR Cultural and Tribal Resources Section	10/31/19
21. Tribe responds to revised administrative draft of EIR Cultural and Tribal Resources Section	11/8/19
22. County notifies Tribe in a letter that the AB 52 consultation process has concluded [a]	12/12/19

NOTES:

a. The AB 52 consultation process concluded because, per Public Resources Code Section 21080.3.2, the County concluded after reasonable effort and acting in good faith, that mutual agreement could not be reached as to measures to mitigate or avoid significant effects on tribal cultural resources. The County fully considered the proposed mitigation measures submitted by the Tribe before reaching this conclusion. The Tribe maintained that impacts to tribal cultural resources cannot be fully mitigated.

Santa Clara County General Plan

The County of Santa Clara adopted its General Plan in 1994. The document provides a comprehensive approach to identifying and addressing cultural resources (referred to as heritage resources). The general plan identifies three strategies for protecting heritage resources:

- Strategy #1. Inventory and Evaluate Heritage Resources
- Strategy #2. Prevent, or Minimize, Adverse Impacts on Heritage Resources
- Strategy #3. Restore, Enhance, and Commemorate Resources as Appropriate

The general plan also acknowledges the challenges for preserving heritage resources in urban settings versus rural settings, such as the Project area, and provides similar but different policies for each setting. Section RC of the Santa Clara County General Plan (County of Santa Clara 2015) addresses cultural and tribal resources that may be considered "heritage resources." There are two general policies that guide implementation of the strategies in rural settings:

> ***Policy R-RC 81****:* Heritage resources within rural unincorporated areas shall be preserved, restored wherever possible, and commemorated as appropriate for their scientific, cultural, historic, and place values.
>
> ***Policy R-RC 82****:* The following strategies should provide overall direction to efforts to preserve heritage resources:
>
> - Inventory and evaluate heritage resources.
> - Prevent, or minimize, adverse impacts on heritage resources.
> - Restore, enhance, and commemorate resources as appropriate.

Other resource policies that pertain to this Project include the following:

> ***Policy R-RC 85****:* No heritage resource shall knowingly be allowed to be destroyed or lost through a discretionary action (zoning, subdivision site approval, grading permit, building permit, etc.) of the County of Santa Clara unless: a. the site or resource has been reviewed by experts and the County Historic Heritage Commission and has been found to be of insignificant value; or b. there is an overriding public benefit from the project and compensating mitigation to offset the loss is made part of the project.
>
> ***Policy R-RC 86****:* Projects in areas found to have heritage resources shall be conditioned and designed to avoid loss or degradation of the resources. Where conflict with the resource is unavoidable, mitigation measures that offset the impact may be imposed.
>
> ***Policy R-RC 88****:* For projects receiving environmental assessment, expert opinions and field reconnaissance may be required if needed at the applicant's expense to determine the presence, extent, and condition of suspected heritage resources and the likely impact of the project upon the resources.
>
> ***Policy R-RC 92****:* The participation of concerned citizens and professionals dealing with heritage resources in the identification of sites and the review and conditioning of projects by its boards and commissions shall be encouraged by the County.

3.5.3 Environmental Setting

3.5.3.1 Ethnographic Context

As discussed in the ethnographic study by Albion (2021), the Ohlone, also known as the Costanoans, occupied a large part of the San Francisco Bay Area (and beyond) at the time of European contact in the late eighteenth century. This area of occupation extended from the San Francisco Peninsula south to the northern part of Big Sur and included parts of the East Bay north and east to the Sacramento–San Joaquin River Delta, and the Santa Clara Valley down to San Juan Bautista. This larger Ohlone territory was further divided into a number of subdivisions based on language dialects. Ohlone territory during the European contact period was occupied by numerous tribal groupings and villages; however, historical sources do not explicitly delineate tribal boundaries. For most parts of west-central California, approximate tribal locations can be determined indirectly, based on marriage patterns and baptism records.

The *Uñijaimas*, the *Ausaimas*, and the *Motsun* were the three major Ohlone tribelets occupying the ethnographic study area in the vicinity of the Pajaro River at its confluence with the San Benito River. Tribelet is the basic unit of Ohlone political organization. The Amah Mutsun Tribal Band (Tribe) today connects its roots to these three Ohlone tribelets.

The *Uñijaima* people were associated with the villages of *Carneadero*, *Saisin*, *Tebletac*, *Thirthiri*, and *Tipisastac* (north of the Project area). The *Ausaimas* occupied the eastern side of the southern Santa Clara Valley, in the vicinity of Pacheco Creek, and their major villages included *Poytoquix*, *Jupagtac*, *Upunixmum*, *Ssuric-numa*, and *Tipumin*. The *Motsun* occupied the area south of the *Uñijaimas*. The southern boundary of the *Uñijaimas* was likely located at the Pajaro River, and *Motsun* territory was located south of the Pajaro River. It is possible that *Juristac* (or *Jurestaca*) was a *Motsun* village north of the Pajaro River.

Subsistence and Religion

Ohlone people built permanent villages and seasonal campsites throughout their ancestral territory. They would travel across this territory to hunt and gather seasonally available resources such as oak, salmon, berries, deer, rabbit, and important basketry and medicinal plants. Ohlone people traded raw materials and finished crafts with other villages and Tribal cultures outside of their ancestral area, in addition to meeting their own needs.

The Ohlone are a deeply spiritual people who continue to practice ceremonial traditions that pre-date missionization. Many of these traditions pertain to the Project area and have been documented in a confidential ethnographic study prepared as part of the environmental review for the Project. This study documents Ohlone religion, and cosmology, provided through consultation with Ohlone Tribal elders and cultural experts and supplemented with data collected by early ethnographers and within the historical record. Central to the ceremonial values of the Sargent Ranch region is the ancestral figure of *Kuksui*, who made his home in these hills and came in spirit to nearby Ohlone villages.

Mission Period

In the late 1700s, Spanish exploratory expeditions passed through southern Santa Clara Valley. The expeditions encountered a number of Native villages in the vicinity of Tar Creek and the Pajaro River (i.e., the general location of Sargent Ranch). Spanish accounts from the time indicate that the southern Santa Clara Valley was an area of extensive indigenous habitation. The three major Ohlone tribelets occupying the ethnographic study area (*Uñijaimas*, the *Ausaimas*, and the *Motsun*) were forced into the missions at San Juan Bautista, Mission San Carlos Borromeo, Santa Clara de Asís, and Santa Cruz.

Mission San Juan Bautista was founded in 1797 along the route that would become the El Camino Real, in an area the Native peoples called *Popeloutchom*.[7] Native Americans living at Mission San Carlos Borromeo (in Carmel) were taken to Mission San Juan Bautista and new converts came from villages and tribes in the surrounding area. Despite acts of Native American resistance, the mission continued to take Native Americans for baptism. Between 1797 and 1807, a large portion of the surrounding region's Native population was forced into the mission and placed under the control of the mission padres. In 1800, 275 *Mutsun* were taken to the mission, enslaved, and baptized.

Following significant deaths from disease due to unsanitary and inhumane conditions at the mission in the early 1800s, indigenous people from the Central Valley and Sierra Miwoks were brought into the mission to manage the expanding ranchlands and herd animals. Outstations, where livestock could be raised away from the Mission itself, were established. These outstations were located on lands formerly occupied by Native peoples and villages. The mission put these lands into "trust," until such time that reorganization of indigenous life consistent with Spanish ways had been achieved (i.e., until the Native peoples had become Hispanicized). Mission San Juan Bautista owned and operated seven outstations, including *Natividad, Aromas, La Brea, San Felipe, Pagsines, Santa Ana*, and *San Matias*.

La Brea was located on land centered on the Sargent Hills in the vicinity of Sargent Ranch extending from Carnadero in the north to the Pajaro River/San Benito River confluence in the south. It is likely that *La Brea* (*brea* is Spanish for tar) derived its name from Tar Creek. While most of *La Brea* was grazing land, the mission outstation also contained an adobe, corrals, and kitchen. *La Brea* was also an important place for the Mission Indians, families permanently occupied the outstation during those years as a center for managing herds of livestock in the vicinity. Archaeological investigations did not, however, uncover significant evidence of this outstation. The outstation may have been located at SCL-577/H, where a few artifacts were found indicative of the mission outstation. Additional investigations focused on the historic-era component would be needed to determine the connection between the site and the mission outstation.

Post-Mission Period (Secularization)

The mission padres managed *La Brea* until 1834, when church properties were confiscated by civil authorities and Native Americans were emancipated from Mission San Juan Bautista. Two brothers, Antonio and Faustino German, acquired the title to Sargent Ranch (and surrounding

[7] The term *Popeloutchom* is generally considered by the Tribe to be a Native region rather than a village name.

lands) during secularization in 1835, having already lived there for a number of years, and constructed adobe houses on the site. During the land transfer, the name changed from *Rancho La Brea* to *Rancho Juristac*.

Native people were living in the area of *Rancho Juristac* immediately after post-secularization, including ancestors of today's Amah Mutsun Tribal Band members (including Ascensión Solórsano's family). Ascensión Solórsano is the cultural bearer of the Tribe and she lived on a now-demolished house on Sargent Ranch. Ascensión Solórsano's teachings and practices carry special significance for the Tribe.

The Tribe recovered knowledge of their ancestral ways of life from the more than 75,000 pages of notes of the Tribe's oral history (as told to John P. Harrington, an early ethnographer during the 1920s and 1930s), most of which came from Ascensión Solórsano. The Tribe recognizes these notes as an essential body of knowledge of their traditions and honors them as scriptural texts. There were several post-mission villages, or rancherias, where emancipated Native peoples found refuge upon the collapse of the mission system. The German brothers apparently wanted the Native peoples living at *Rancho Juristac* evicted but were halted from doing this by civil authorities and a compromise was agreed to where the Native peoples would be allowed to occupy the area at the confluence of Pescadero Creek and the Pajaro River.

In 1856, Faustino German sold a portion of the property to the Sargent brothers, but several Native peoples continued to live on the land through 1856 and beyond after the property was sold. The Project area and portions of greater Sargent Ranch continued to be used for ranching throughout the late 1800s and early 1900s. When James Sargent died in 1900, he passed on his estate to his children; however, according to records, most of the Native peoples had left or were evicted by 1936.

Recent History

By the time anthropologists began their studies of the California Indians in the early twentieth century, many of the tribes' pre-contact cultural traditions had been forgotten. During the Mission Period, Franciscan fathers discouraged or banned Ohlone customs, rites, and rituals.

Further, as a result of disease and birth rate declines, the Ohlone population fell from approximately 10,000 in 1770 to less than 2,000 in 1832. Limited knowledge of their language, lifestyle, and material culture was preserved by the few surviving Ohlone and was supplemented by eighteenth century Spanish letters, diaries, and archival information drawn from the ethnographic record left by pioneer ethnographer J. Peabody Harrington. From this information and archaeological investigations of the area, ethnographers have been able to piece together information related to traditional Ohlone culture at the time of European contact.

3.5.3.2 Archaeological Resources Context

As discussed in the Cultural Resources Sensitivity Assessment for the Sargent Ranch Project by Far Western (2017a), the Santa Clara Valley landscape has changed significantly during the last 15,000 years. Floodplains and alluvial fans of the Santa Clara Valley experienced repeated cycles of deposition, erosion, and stability, processes that have strongly influenced the condition of the local archaeological record. The potential for surface prehistoric archaeological sites to be located within the Project area was assessed.

The potential for unidentified surface prehistoric archaeological sites to be located within the Project area was assessed using a weighted model recently created for the San Francisco Bay-Delta Region that includes all Santa Clara County (Far Western, 2017a). This model considers three environmental factors—surface slope, determined using a digital elevation model; distance to a historic-era stream; and distance to a stream confluence. Results identify areas of greater or lesser sensitivity for prehistoric surface sites.

Areas assessed as having the highest potential (high or highest sensitivity) for prehistoric and historic-era surface archaeological sites were surveyed. A pedestrian transect survey of the site was completed between October 23 and 26, 2017. The survey team focused on areas with the highest surface site potential, while excluding the extremely steep slopes categorized as having the low and lowest potential for archaeological surface sites. In-field assessments of topography and archaeological potential were also made. Revisions to the site sensitivity maps, based on on-the-ground observations, were completed.

Archaeological sensitivity maps indicate that the potential for prehistoric surface sites is lowest to low in the majority of the Project mining areas, with the high to highest potential at the processing plant and a portion of the permanent overburden stockpile area, Phase 1 and Phase 2 mining areas, and along much of the existing roadways (including Old Monterey Road).

The potential for buried prehistoric sites in the Project area was also assessed and is lowest to low in approximately 90 percent of the Project area. The majority of the high potential area is adjacent to Tar Creek at the processing plant and permanent overburden stockpile area, with a small amount of highest potential area located along Old Monterey Road near Tick Creek.

Because of its long history as a major transportation corridor extending back to the 1770s, the Project area is also sensitive for historic-era archaeological sites. Areas with the greatest potential for historic-era archaeological resources include areas related to El Camino Real, La Brea Mission, Antonio and Faustino German Adobe, the stagecoach road, and Carnadero School (described further below).

3.5.3.3 Historic Context

The Project area is located within the Highway 101 corridor between San Juan Bautista and Gilroy which has been a primary artery of travel and commerce since the initial settlement of the northern Alta California frontier by Spain in the late eighteenth century. As discussed in the Far Western cultural resources sensitivity assessment (2017a), the route became a primary corridor of travel (part of El Camino Real) between the Bay Area and Monterey, and later to the mission established in 1797 at San Juan Bautista. In the early years of the nineteenth century, the mission fathers at San Juan Bautista established outlying ranchos in the valleys and foothills along this traveled way. Established in 1803, San Juan Bautista mission’s La Brea Rancho was located north of the Pajaro River in the vicinity of Carnadero (the butchering place) where Tic Creek emerged from the Santa Cruz Mountains and drained into Carnadero Creek.

Later, a stagecoach stop between San Jose and Monterey along El Camino Real was founded in the Project vicinity. The stage road departed from El Camino Real in the vicinity of Tar Creek and climbed uphill southwesterly, paralleling Sargent Creek to the Pajaro River to Monterey Bay. The stage road remained active until the 1880s. Since the 1870s, the Highway 101 corridor has also supported railroad traffic with a station strategically located near the convergence of the Old Monterey Road and the Pajaro River crossing. Historic-era buildings (depot, express office, post office, hotel, saloon, open-air dance floor, gas station, etc.) were once associated with the station and town of Sargent but are now gone.

The Sargent brothers emerged as the principal owners of property along the El Camino Real corridor (later known as State U.S. 101) in southern Santa Clara County at the start of the century. The 10,000-acre Sargent Ranch extended from the former Juristac Rancho westerly into the Sargent Hills and the Pescadero Creek watershed. The ranch was originally headquartered at the Faustino German adobe site in the vicinity of where Tar Creek crossed El Camino Real, at a place later named Corporal. Haciendas were later established along El Camino Real where Tic Creek and Tar Creek emerge from the foothills along Old Monterey Road at Sargent Ranch.

3.5.3.4 Known Archaeological and Historic Resources

Table 3.5-2 summarizes the known archaeological and historic resources in the Project area and their eligibility for the NRHP and CRHR registers (Far Western Anthropological Research Group, Inc. 2017b). One of these resources is eligible for the NRHP and CRHR registers: Prehistoric midden with known human burials within the Antonio German Adobe and Farm Complex: CA-SCL-577/H. Although the prehistoric component of CA-SCL-578/H was found to be ineligible for NRHP and CRHR, the exact location and significance of buried historic-era resources associated with CA-SCL-578/H are unknown and have not been evaluated.

Antonio German Adobe and Farm Complex: CA-SCL-577/H

The Antonio German adobe and farm complex was located immediately adjacent to Old Monterey Road (in the vicinity of the Project entrance from U.S. 101) between two small drainages converging at Tic Creek. In the 1830s, it was occupied primarily by Antonio, his wife and children, and several farm laborers. Census data from 1833 to 1852 suggest that there must have been multiple dwellings constructed at the site. The site consists of two components dating to the prehistoric and historic periods.

The prehistoric component is comprised of a moderately large, intact midden deposit that extends to a depth of 2.3 feet, as well as flaked stone tools and flaking debris, ground stone tools, and vertebrate faunal remains. Human burials are also present. The deposit dates predominately to the Early (4500–2500 BP[8]) and Middle (2500–850 BP). The prehistoric component at SCL-577/H was found eligible for the NRHP. It is therefore also eligible for the CRHR.

8 BP (Before Present)

TABLE 3.5-2
SUMMARY OF ARCHAEOLOGICAL AND BUILT ENVIRONMENT RESOURCES

Resource	Resource Description	Register Eligibility
Antonio German Adobe and Farm Complex: CA-SCL-577/H	Prehistoric midden with known human burials	NRHP and CRHR eligible
	Buried historic-era artifacts from Spanish and Mexican occupation, and the Mission and Rancho Periods	Insufficient data to evaluate the historic-era component
Faustino German Adobe and Ranch Complex: CA-SCL-578/H (includes the Sargent Ranch Complex)	Highly disturbed prehistoric flaked stone deposit with pockets of midden	Ineligible for NRHP and CRHR
	Historic-era artifacts related to the Spanish and Mexican occupation	Unevaluated
	Four historic-era structures (residence, barn, shed, corral)	Ineligible for NRHP and CRHR
Bloomfield Horse Ranch: P-43-000855	Five historic-era structures buildings (two residences, two sheds, stables)	Ineligible for NRHP, CRHR eligibility unevaluated
Carnadero School: 101-2H/P-43-002462	Site of demolished Carnadero school building; low probability of archaeological deposits	Unevaluated (avoided by Project)
Old Monterey Road/Old State Route 2: P-43-003850	Historic-era (concrete and asphalt) road alignment, continually used and maintained	Ineligible for NRHP and CRHR
Tick Creek and Tick Creek Culverts: P-43-000872 and P-43-000873	Box culverts along Old Monterey Road	Unevaluated (avoided by Project)
Road Alignment: Th-03	Paved and striped asphalt road	Ineligible for NRHP and CRHR

NOTES:
* Trinomial identification numbers have been simplified for the purposes of this report and summary table.

Abundant nineteenth-century artifacts were recovered during testing of the prehistoric component in 1993, including ceramic sherds indicative of Spanish and Mexican sites, and floor and roof tiles characteristic of Mission- and Rancho-Period sites. The current site boundary does not indicate the extent of the historic-era component. The State Historic Preservation Officer determined that not enough data was produced from the 1990 excavations to allow for evaluation of the historic-era component. It is possible that additional historic-era archaeological resources are present in the vicinity. Because the people who were associated with this site have been identified, and that population base appears to have been relatively stable, it enhances the site's potential to yield important information.

Faustino German Adobe and Ranch Complex: CA-SCL-578/H

The Faustino German Adobe and Ranch Complex was located immediately adjacent to the Old Monterey Road near Tar Creek. Faustino and his wife lived in a small, two to three room single-story adobe, but employed many ranch hands of Hispanic descent and Native Americans who resided at the adobe or in nearby dwellings. Census data from 1852 suggest that there were as many as two dozen people residing on Faustino's ranch. Numerous buildings (associated with the Sargent Ranch headquarters) have been erected and demolished at the site of the Faustino German adobe. Over the long period of occupation by multiple generations of Sargent family members, railroad and highway construction has impinged on the Sargent Ranch complex and resulted in buildings being torn down or relocated and roads being realigned. The site consists of two components dating to the prehistoric and historic periods.

The prehistoric component of SCL-578/H is a highly disturbed deposit consisting of flaked stone and a few pockets of midden located beneath and just west of U.S. 101. SCL-578/H was previously evaluated and found ineligible for the NRHP with State Historic Preservation Officer concurrence; therefore, it can also be considered ineligible for the CRHR.

In depth analysis was not conducted on the historic-era artifacts recovered during evaluation of the prehistoric component. Historic-era artifacts observed include ceramics, glass, and nails. It is possible that the historic-era assemblage recovered is not reflective of all activities at the site. Significant remains of the Faustino German adobe—architectural remains and artifact deposits—could be present on the property. Archaeological resources related to the Spanish and Mexican Periods of California history are rare and can make significant contributions to our understanding of this important and poorly documented time period. Historic-era artifact deposits from this site have never been analyzed and therefore do not provide additional evidence as to the site's early occupation. It is also possible that additional historic-era artifact deposits are located in the vicinity outside of the Project area boundary.

Sargent Ranch Complex: CA-SCL-578/H

Four historic-era structures (a residence and shed, barn, and corral) composing the Sargent Ranch Complex are adjacent to the Old Monterey Highway/access road and Tar Creek, north of the proposed processing plant. These structures were constructed between 1914 and 1939 and are described below.

The residence is an approximately 930-square-foot bungalow with a side-gable roof sheathed with composition shingles and exposed angle brackets. The building has a rectangular footprint with an enclosed partial-width porch extension and board-and-batten wood siding, as shown in the photo to the right. Immediately west of (behind) the house is an approximately 1,300-square-foot wood frame storage shed, which has a rectangular footprint, a side-gable roof with corrugated-metal sheathing, and an open north-facing façade (see **Figure 3.5-2**).

At the west end of the complex is an approximately 3,000-square-foot, wood-frame transverse barn, which has a square footprint, concrete foundation, and steeply pitched gable roof with extended peaks above the hay doors (see **Figure 3.5-3**). The barn has corrugated metal siding and roofing, except for north-side vertical wood board siding, as shown in the photo below. Several of the doors appear to have fallen off the structure, as shown below.

West of these structures is the three-acre cattle corral, containing a network of metal pipe fencing and gates and wood structures, as shown in the photo below (see **Figure 3.5-4**). Near the center of the enclosure is a wood-frame shade structure, which appears to have a gable roof sheathed with corrugated metal.

None of these structures meets the criteria for listing in the NRHP or the CRHR because they do not have sufficient historical significance. Nor are the structures located on the County's heritage resource inventory.

Figure 3.5-2
Residence Associated with CA-SCL-578/H

Figure 3.5-3
Barn Associated with CA-SCL-578/H

Figure 3.5-4
Corral Associated with CA-SCL-578/H

Bloomfield Horse Ranch: P-43-000855

Historic-era site P-43-000855 is the Bloomfield Horse Ranch, located at 3201 Monterey Road adjacent to the Project entrance from U.S. 101, though outside of the defined Project area. The property complex comprises five buildings—two single-family residences built in the 1920s to the 1930s, equipment shed built around 1955, horse stables built around 1920 and 1950, and a stock shed built in the 1940s. The property has been deemed ineligible for the NRHP but has not been assessed for eligibility for the CRHR or for local significance.

Carnadero School: 101-2H/ P-43-002462

Historic-era site P-43-002462 is the location of the now-demolished Carnadero school building, which operated on the west side of Old Monterey Road (which would be improved as part of the Project) just north of Tick Creek, from around 1870 to 1920. The Carnadero school served children who lived at the south end of the Santa Clara Valley. The location of the school (along the Project access road) has not been previously examined or tested for archaeological deposits, but the site would be avoided by the proposed Project.

Old Monterey Road/Old State Route 2: P-43-003850

Old Monterey Road was originally developed as a county wagon road in 1858 and later converted to State Route 2 in 1914. This section of Old Monterey Road/Old State Route 2 is located in the vicinity of the original El Camino Real alignment first travelled by foot, horseback, and ox carts during the era of Spanish colonial settlement in the late eighteenth century. It also provided ready access to the Spanish- and Mexican-era missions and ranchos. Among those who frequented the route were the mayordomo and herdsmen who cared for San Juan Bautista mission sheep and cattle and operated a waystation for travelers at the mission's La Brea Rancho (Far Western, 2017b).

In 1853, the County of Santa Clara Board of Supervisors commissioned construction of an improved county road between Gilroy and San Juan Bautista that roughly followed the El Camino Real alignment. The road, which came to be known as the Monterey-San Juan Road, and later Old Monterey Road, was completed in 1858. In the early twentieth century, the State of California Highway Commission adopted the route as State Route 2, and in 1914 completed a project to widen the road to 15 feet and to pave it with concrete. Later, between 1924 and 1926, the concrete was overlain with asphalt and slightly widened. In the Project area, the road was replaced as a main access route by the current alignment of U.S. 101 in 1949. Old Monterey Road/Old State Route 2 has since functioned as an access road for Sargent Ranch and adjacent properties (Far Western, 2017b).

As discussed in the Far Western Supplemental Cultural Resources Survey Report (2017b), the roadway in the Project area was deemed ineligible for listing on the NRHP and CRHR, and did also not appear to be a historical resource defined by CEQA because it lacked integrity to its period of construction.

Tick Creek Culvert: P-43-000872 and Tick Creek Branch Culvert: P-43-000873

Both of these historic-era resources are appurtenant features of Old Monterey Road. The Tick Creek Culvert (shown below in **Figure 3.5-5**) is a double-box, board-formed concrete culvert with sacked concrete wingwalls and timber post railings along the roadway.

Figure 3.5-5
Tick Creek Branch Culvert

The Tick Creek Branch Culvert is a single-box, reinforced, board-formed concrete culvert with sacked concrete wingwalls, and downstream concrete rip-rap fortification. Timber post railings are located along the margins of the roadway above the culvert.

Both culverts were constructed in 1914 as part of the California Highway Commission's project to widen and pave to a two-lane automobile road. The sacked concrete wingwalls appear to be a later addition. These resources have not previously been evaluated for listing on the NRHP or CRHR but would be avoided by the proposed Project.

Abandoned Road Alignment: Th-03

This abandoned road alignment (shown below in **Figure 3.5-6)** is located to the east of U.S. 101 where wetland mitigation area is proposed. TH-03 travels east about 0.25 mile until it meets and follows the western bank of the Pajaro River for about 0.50 mile before extending in a meandering, northwesterly route for about another 0.50 mile, where it terminates at the intersection with an unnamed rural access road near Tar Creek. Th-03 is paved with asphalt with a solid yellow lane and is heavily overgrown. The segment is approximately 0.3 mile in length, with a fence line along the alignment in several places. This rural access road does not meet the criteria for listing in the NRHP or CRHR because it does not have sufficient historical significance.

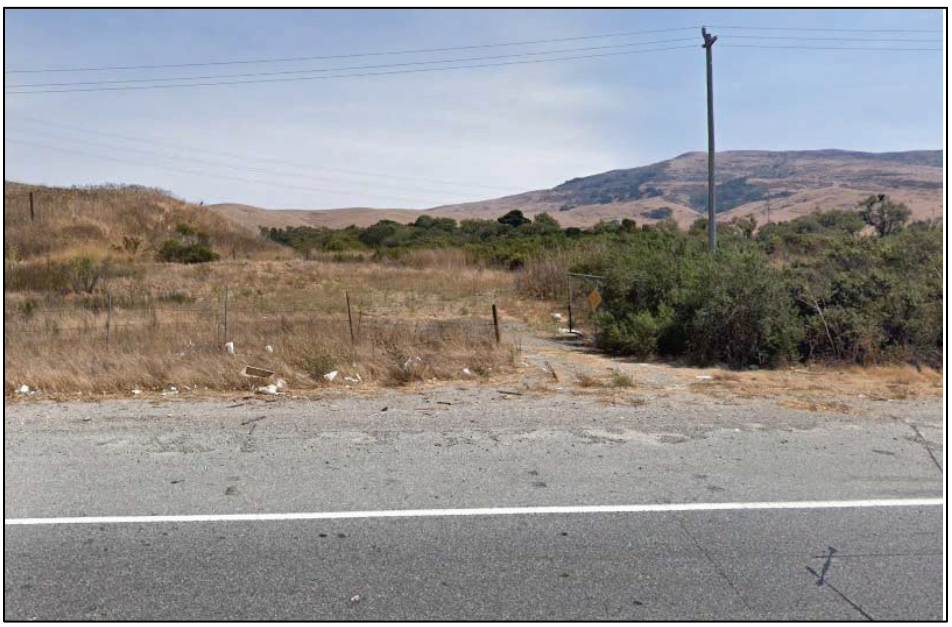

Figure 3.5-6
Abandoned Road Alignment: Th-03

3.5.3.5 Tribal Cultural Resources

Tribal Cultural Resources (TCRs) Within the Project Area

The following information is based on the results of the confidential ethnographic and ethnohistoric study for the Sargent Ranch Project, completed by Albion Environmental, Inc. (Albion) and Environmental Science Associates (Albion, 2021), on behalf of the County of Santa

Clara. Through archival research, interviews, and consultation with the Tribe, four tribal cultural resources within the Project area were identified: 1) Juristac Tribal Cultural Landscape (JTCL) 2) Betevel Bluff, 3) SCL-577/H, and 4) SCL-578/H. **Table 3.5-3** summarizes the general location, integrity, and California Register of Historical Resources (CRHR) eligibility of each of the four tribal cultural resources within the Project site (Albion 2021).

Sargenta Village (CA-SCL-578/H)

As stated in Table 3.5-3, the JTCL encompasses the Project site and surrounding areas, including the village site of Sargenta, located in the vicinity of Sargent Station. As part of the JTCL, the Project site could contain resources, such as plants used for healing or ceremonies, used by inhabitants of a village within the JTCL, even where the village site itself is outside of the Project boundaries.

Historical records are complicated for Sargent Station. There were two railroad stations in or near the current Project area:

> **Sargent Station:** The Sargent residence appears on historic maps of the region as early as 1866, near the location of CA-SCL-578/H (Healy, 1866). The rail station was reportedly placed at the mouth of Tar Creek, approximately three miles east of the tar pits, established in 1869, at about the same location as the residence depicted on the 1866 map.
>
> **Betebel Station:** This station was built no later than 1880, at the location of CA-SCL-92/H, at the confluence of the Pajaro and San Benito rivers. A 1940 California Division of Highways As-Built Map depicts a rail station here, as well as a house and stone cabins, on the Sargent property (Caltrans 1940). It is specifically referred to as the Sargent Railroad Siding on archaeological records (Milliken et al. 1993; Nelson 1999; Shurkin et al. 1974), though it appears that this attribution is in error. The station is clearly depicted as "Betabel" on the 1915 USGS map of the area. The discrepancy may be a result of the depiction on the Caltrans As-Built—the map is clearly labeled "Sargent" but this may be only in reference to the property held there and not the name of the station or residence/cabins, which do not appear to have been separately named on the map.

Both station locations are along the Pajaro River riparian corridor, which facilitated the collection of medicinal plants, and both had Native American artifacts present when first recorded. The Sargenta Village community was known to be at the mouth of Tar Creek as late as 1882. The first village site, located near Sargent Station, was impacted by US 101 in 1936, which resulted in the destruction of the of the Sargent adobe and residential complex. The second site, Betabel Station, is shown on Caltrans as-built plans from 1940, as being completing destroyed.

For the reasons stated in Table 3.5-3, the original Sargenta site (CA-SCL-578/H) was determined to be eligible as an individual Tribal Cultural Resource under Criterion 1. The portion of the site within the Project footprint consists of a light artifact scatter; the main part of the village likely lay outside of the Project footprint. The existing archaeological data and historical literature suggest that the physical archaeological footprint of the second Sargenta village site (CA-SCL-92/H) does not extend into the Project site.

Table 3.5-3
Summary of General Location, Integrity, and California Register of Historical Resources (CRHR) Eligibility of each of the Four Tribal cultural Resources

Tribal Cultural Resource	CRHR Criteria			
	1. *Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.*	2. *Associated with the lives of persons important to local, California, or national history.*	3. *Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.*	4. *Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.*
Juristac Tribal Cultural Landscape (JTCL). Place where the Tribe's spiritual traditions blended seamlessly with the habitation of the village sites, the numerous natural resources nearby, and the sacred areas of the springs, waterways, and hills. Encompasses the Sargent Hills and parts of the adjacent waterways, including Sargent Creek, Tar Creek, and Tick Creek, and includes numerous archaeological sites, resource collection areas, and landscape features.	**Eligible.** Value under Criterion 1 for its association with several important events, including creation of the Maksahjah (Sargent Hills), Big Head Dance, Noyola confronts the Mutsun evil spirit, the Healing of Barbara Solórsano, and Mutsun ceremonies.	**Eligible.** Associated with numerous individuals that are important to Mutsun and the AMTB culture, including Ascensión Solórsano, Kuksui, Kaknú, Noyola, other deities directly associated with the landscape, and shamans and doctors.	**Eligible.** Associated directly with shamanic and doctoring traditions of the Mutsun and the AMTB people, particularly the Spring of Eternal Water and the Juristac village location. Doctoring, healing, and leading ceremonies are master crafts in the AMTB culture.	**Eligible.** One of the purposes of the JTCL in the AMTB culture is to educate. It is the place where Ascensión Solórsano learned the craft of healing from Mutsun elders, and this experience led to her recording much of the history and culture of the AMTB with early-twentieth-century ethnographers. This knowledge forms the core of much of the AMTB identity.
	Integrity. Intact for location, setting, association, and feeling.	**Integrity.** Intact for location, setting, association, and feeling.	**Integrity.** Intact for location, setting, association, and feeling.	**Integrity.** Intact for location, setting, association, and feeling.
Betevel Bluff. A hill overlooking the confluence of the San Benito and Pajaro Rivers, in southern Santa Clara County. Evaluated in conjunction with the Juristac Tribal Cultural Landscape. Contributing element to that landscape, but has sufficient importance to the AMTB to be considered as an individual tribal cultural resource under AB 52.	**Eligible.** Associated with the Big Head Dance, an important healing ceremony held by the Mutsun at the Juristac village site that was near the confluence of the San Benito and Pajaro Rivers. During this ceremony, the creator deity Kuksui would descend the slope flying in a zigzag pattern on his way to the roundhouse. Also a place where Tribal people would go for renewal ceremonies and where shamans and doctors practiced their craft, at poles installed on the hillside.	**Eligible.** Associated with both Kuksui and the powerful headmen who lived and performed ceremonies at Juristac. The names of the headmen have been lost over time, but this does not detract from the importance of this place under Criterion 2	**Ineligible.** Betevel Bluff is associated with shamanic practices and the craft of shamanism of pre-contact Ohlone, and post-contact Mutsun and the AMTB. However, material evidence of that master craft, such as roundhouse remains, sacred springs, shamanic poles or other regalia features described in the oral histories and ethnographic accounts, are lacking from the Project Area.	**Eligible.** Betevel Bluff remains a prominent landscape feature wherein Tribal elders could take Tribal youth to teach them their culture and ceremonial history. Betevel Bluff has the potential to be used for teaching Tribal members about many of the historic themes identified for this resource: Indigenous Resistance and Survival, JTCL as Provider, JTCL as Home, and JTCL as a Place of Power.
	Integrity. Intact for location, setting, association, and feeling.	**Integrity.** Intact for location, setting, association, and feeling.	**Not applicable.**	**Integrity.** Intact for location, setting, association, and feeling.

TABLE 3.5-3 (CONTINUED)
SUMMARY OF LOCATION, INTEGRITY, AND CALIFORNIA REGISTER OF HISTORICAL RESOURCES (CRHR) ELIGIBILITY OF EACH OF THE FOUR TRIBAL CULTURAL RESOURCES

	CRHR Criteria			
Tribal Cultural Resource	1. *Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.*	2. *Associated with the lives of persons important to local, California, or national history.*	3. *Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.*	4. *Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.*
SCL-577/H. Multi-component, indigenous (precolonial) and historic-era archaeological site located at the northern end of the Project Area.	**Eligible.** Associated with pre-contact habitation of this area by Ohlone people. The presence of at least six burials here indicates the performance of burial ceremonies, important events in Ohlone traditions that consecrate the ground in which the burials are interred, creating a sacred place.	**Ineligible.** Historical research for and oral history of the Project did not identify any individuals associated with this location that would suggest CA-SCL-577/H has values under Criterion 2.	**Ineligible.** The site lacks a robust archaeological deposit or oral history accounts that could illustrate the materials, methods, and finished products needed to support an association with a master craft or craftsperson.	**Eligible.** CA-SCL-577/H contains the evidence, and example, of numerous past traditions, from tool production to ornamentation. The site has been found to have the potential for teaching archaeologists; this data potential also exists for Tribal people.
	Integrity. Intact for location, setting, association, and feeling.	**Not applicable.**	**Not applicable.**	**Integrity.** Intact for location, setting, association, and feeling.
CA-SCL-578/H. This multi-component archaeological site, which is located in the vicinity of the southern end of Old Monterey Road, is a contributing element to the JTCL, but has sufficient importance to the AMTB to be considered as an individual tribal cultural resource under AB 52.	**Eligible.** The historic component of CA-SCL-578/H is associated with the survival of post-contact Ohlone people. Refuge sites and places where Ohlone culture was preserved and passed forward by mission survivors are significant to the Ohlone, even if the site's current conditions cannot convey those values to non-Tribal people. Post-mission indigenous survival is an important event to the AMTB, and the places where post-contact Ohlone people sought safety and refuge have values under Criterion 1 for this association.	**Ineligible.** This historical research and oral history of the Project did not identify any individuals associated with this location that would suggest that CA-SCL-578/H has values under Criterion 2.	**Ineligible.** The site lacks a robust archaeological deposit or oral history accounts that could point to the types of activities that took place here. As such, the location lacks the context necessary to tie it to important crafts, arts, ceremonies, or traditions of Mutsun people and the AMTB.	**Eligible.** Although little of the site remains, this location is still important as a location where Tribal people can come to reflect on Ohlone survival during the Mission Period and the connection of this place to the larger JTCL.
	Integrity. Intact for location, setting, association, and feeling.	**Not applicable.**	**Not applicable.**	**Integrity.** Intact for location, setting, association, and feeling.

NOTE: The table is a summary of information from Chapter 5 of Ethnohistoric and Ethnographic Study of Sargent Ranch, Santa Clara County, California (Albion 2021).

Juristac Tribal Cultural Landscape

The Juristac Tribal Cultural Landscape (JTCL) was, and continues to be, the most sacred landscape of the Mutsun people and the AMTB with immense spiritual and cultural value. The JTCL spans approximately 33 square miles from Gilroy in the north to Watsonville in the south. The entirety of the landscape as defined by the boundaries given to the AMTB is a Tribal Cultural Resource, which includes all hills and natural features on the Project site. The AMTB recognizes the JTCL's importance as a home to spiritual deities, tribal ceremonies, doctoring, a refuge, and a source of important plants, animals and fish. AMTB villages in the JTCL maintained the sacredness of the landscape.

The Juristac Tribal Cultural Landscape is considered a TCR. The character-defining features of the JTCL include nature features like springs, creeks, and rivers, and landscape features associated with tribal history, culture, and spirituality. Viewsheds comprising line of sight to Pacheco and Mariposa Peaks, native habitats, archaeological sites, trails, and ceremonial areas are also character-defining features of the JTCL. Specific character-defining features to the JTCL which overlap, adjoin or encompass the Project area include:

- Maksahjah, the Sargent Hills themselves, which are considered sacred
- Sargent Creek riparian and wildlife corridor
- Tar Spring Creek riparian corridor
- Trees of life—large live oak trees held sacred in Mutsun traditions
- Ancestral trails, especially those associated with the travel of important tribal figures, including deities and spirits
- Ceremonial areas associated with renewal, healing, resource collection, or harvesting
- Landscape features associated with Tribal history, culture, or spirituality

3.5.4 Impact Evaluation

3.5.4.1 Significance Criteria

The project would result in a significant impact on a cultural or tribal cultural resource if it would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5;

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;

c) Disturb any human remains, including those interred outside of formal cemeteries; or

d) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code 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:

1. 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
2. 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 Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.5.4.2 Project Impacts

Impact 3.5-1: The Project would cause a substantial adverse change in the significance of known historical or archaeological resources. (Less than Significant with Mitigation Incorporated)

Significance criteria (a) and (b) are applicable to this impact discussion. One of the identified resources listed in Table 3.5-1 is eligible for the NRHP and CRHR registers: Prehistoric midden with known human burials within the Antonio German Adobe and Farm Complex: CA-SCL-577/H. Although the prehistoric component of CA-SCL-578/H was found to be ineligible for NRHP and CRHR, the exact location and significance of buried historic-era resources associated with CA-SCL-578/H are unknown and could not be evaluated. Both resources are assumed to be CEQA-defined “historical resources” for purposes of this impact analysis.

Construction

The mining pits, processing plant, rail spur, and conveyor belt are not located close enough to CA-SCL-577/H and CA-SCL-578/H to affect these known resources during construction. Use of Old Monterey Road by trucks during construction could cause enough deterioration in the road surface to disturb burial sites and archaeological deposits that are part of CA-SCL-577/H. A free-span bridge is proposed over Tar Creek to provide truck access to the processing plant from Old Monterey Road. Construction of this bridge could result in disturbance of buried historic-era artifacts that are associated with CA-SCL-578/H. Use of Old Monterey Road by construction traffic, as well as installation of the free-span bridge over Tar Creek could disturb CA-SCL-577/H and CA-SCL-578/H, causing a substantial adverse change in the significance of known historical or archaeological resources. Therefore, the construction impact on known historical or archaeological resources would be **significant**.

Operation

The mining pits, processing plant, and conveyor belt are not located close enough to CA-SCL-577/H and CA-SCL-578/H to affect these known resources during Project operations. Operation of the rail spur would not cause ground disturbance. Use of the Tar Creek bridge during operations would not disturb buried historic-era artifacts that are associated with CA-SCL-578/H. However daily use of Old Monterey Road by haul trucks as well as any improvements or maintenance of the road during operations could cause enough deterioration in the road surface to disturb burial sites and archaeological deposits within CA-SCL-577/H. In addition, use of the access road between Tar Creek and the processing plant by trucks during operations could disturb of buried historic-era artifacts that are associated with CA-SCL-578/H.

Use of Old Monterey Road and the access road between Tar Creek and the processing plant by operational traffic could disturb CA-SCL-577/H, causing a substantial adverse change in the significance of known historical or archaeological resources. Therefore, the impact of Project operations on known historical or archaeological resources would be **significant**.

Reclamation

The locations of the mining pits, processing plant, and conveyor belt are not located close enough to CA-SCL-577/H and CA-SCL-578/H to affect these known resources during reclamation. As the rail spur would not be removed, there would be no ground disturbance associated with this Project component during reclamation. Use of the Tar Creek bridge during final reclamation of the Project site would not disturb buried historic-era artifacts that are associated with CA-SCL-578/H. However, daily use of Old Monterey Road by haul trucks as well as any improvements or maintenance of the road during operations could cause enough deterioration in the road surface to disturb burial sites and archaeological deposits within CA-SCL-577/H. In addition, use of the access road between Tar Creek and the processing plant by trucks during reclamation could resources result in disturbance of buried historic-era artifacts that are associated with CA-SCL-578/H.

Use of Old Monterey Road by traffic associated with final reclamation of the Project site could disturb CA-SCL-577/H, causing a substantial adverse change in the significance of known historical or archaeological resources. Therefore, the impact of reclamation on known historical or archaeological resources would be **significant**.

Mitigation Measure 3.5-1:

a. ***Resource Avoidance/Protection.*** Roads used by the Project, such as the existing access roads that cross identified resources (CA-SCL-577/H and CA-SCL-578/H), shall be capped through use of durable materials to ensure that wear and tear by vehicles of the road surface does not disturb the road bed and damage archaeological deposits, or burials located underneath. No ground disturbance below the existing grade shall occur. In addition, fencing shall be used to prevent vehicles from leaving the access roads where they are adjacent to identified resource sites. The Applicant shall submit archaeological and historic resource protection plans to the County Department of Planning and Development for review and approval prior to any Project construction.

b. ***Archaeological Testing Program for Known and Unrecorded Resources.*** For areas where ground disturbance would occur, the Applicant shall retain a qualified archaeological consultant to prepare an Archaeological Testing Program (ATP) that covers each of the three Project phases: construction, mining, and reclamation. The ATP shall identify the type of archaeological resources that could potentially be disturbed by the proposed Project, the testing method to be used, and the locations recommended for testing based on sensitivity mapping for areas identified as having high to highest sensitivity, as well as and the location of known resources. The purpose of the ATP will be to determine whether archaeological materials are present and evaluate whether the materials constitute an historical resource. The ATP shall focus on areas that are of high to highest sensitivity, as well as those that are in the vicinity of CA-SCL-578/H, and would apply during all phases of the Project. Disturbance shall not occur in areas where newly-discovered significant cultural resources are identified; newly-discovered significant cultural resources shall be avoided if feasible, with data recovery only if avoidance is not feasible, consistent with CEQA Guidelines § 15126.4(b).

The Applicant shall submit the draft ATP to the County Department of Planning and Development and to a designated representative of the Amah Mutsun Tribal Band for review. The County and Tribal representative shall have 45 days to review and comment on the draft ATP. The qualified archaeological consultant shall then update the draft ATP to incorporate relevant comments and resubmit a final ATP to the County and Tribal representative. Testing shall not begin until the County Department of Planning and Development has approved the final ATP.

Testing shall be conducted by the archaeological consultant and observed by a monitor designated by the Amah Mutsun Tribal Band in accordance with the approved Archaeological Monitoring Program (AMP), as described further in Mitigation Measure 3.4-1c.

At the completion of activities associated with the ATP, the archaeological consultant shall submit a written report of findings to the County of Santa Clara Department of Planning and Development and Tribal representative for review. If, based on the ATP, the archaeological consultant finds that potentially eligible archaeological resources are present, the archaeological consultant shall consult (as part of one in-person meeting or conference call) with the County Department of Planning Development and the Tribal representative to determine if additional measures are warranted during testing. Additional measures that may be undertaken include specialized archaeological testing methods and/or an archaeological data recovery program.

c. ***Archaeological Monitoring Program for Known and Unrecorded Resources.*** Following completion of the ATP, the Applicant shall prepare and the County Department of Planning and Development shall implement an Archaeological Monitoring Program (AMP) in consultation with the archaeological consultant and the Tribal representative. The AMP shall include the following:

- Prior to any ground-disturbing activities related to the development of the Project throughout the Project life, including access roads, the free-span bridge over Tar Creek, mining areas, and processing facilities, the following shall occur:
  i. The County, in consultation with the archaeological consultant and Tribal representative, shall determine what Project activities shall be monitored.
  ii. All ground-disturbing activities (outside of the low sensitivity areas of Phases 1 and 2), such as demolition, excavation, grading, utilities installation, etc., shall require archaeological and Native American monitoring because of the risk these activities pose to potential buried archaeological resources and to their depositional context.
- The Native American monitor shall be designated/approved by the Amah Mutsun Tribal Band to monitor ground-disturbing activities at the Project proponent's expense. The terms of Native American monitoring shall be determined prior to the onset of monitoring activities, including requirements for prior notice of areas to be disturbed and provisions if a designated monitor is unavailable,. The Native American monitor shall be notified at least 30 days prior to onset of construction, and at least 14 days in advance of when and where new ground disturbance will

occur. The Native American monitor shall be present at all times that the archaeological monitor is present, unless the Native American monitor determines that his/her presence is not required at a particular location. If the Native American monitor does not arrive or is not present as scheduled, Project work may continue in the monitor's absence.

- The archaeological monitor and Native American monitor shall advise Project contractors to be alert for evidence of archaeological resources, how to identify archaeological resources, and of appropriate protocol in the event of discovery of an archaeological resource.
- The archaeological monitor and Native American monitor shall be present on the Project area according to a schedule agreed upon by the archaeological consultant and County (generally during ground-disturbing activities) until the County has, in consultation with the Project archaeological consultant and Tribal representative, determined that Project construction activities in the particular disturbance area could have no effects on significant archaeological deposits.
- The archaeological monitor shall record and be authorized to collect soil samples and material of archaeological or historical interest as warranted for analysis.
- If an intact archaeological deposit is encountered, ground-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall temporarily redirect ground-disturbing activities until the deposit is evaluated. The archaeological consultant shall immediately notify the County Department of Planning and Development of the encountered archaeological deposit. The archaeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit, and present the findings of this assessment in a report submitted to the County and Tribal representative. Should archaeological resources with ties to Native Americans be discovered, the archaeological monitor shall immediately notify the County Coordinator of Indian Affairs.

The draft AMP shall be submitted to the County Department of Planning and Development and to a designated representative of the Amah Mutsun Tribal Band for review. The County and Tribal representative shall have two weeks to review and comment on the draft AMP. The qualified archaeological consultant shall then update the draft AMP to incorporate relevant comments and resubmit a final AMP to the County and Tribal representative. Testing shall not begin until the County has approved the final AMP.

d. ***Archaeological Data Recovery Program for Known and Unrecorded Resources.*** If an eligible archaeological resource is determined to be present as part of the ATP or AMP, then the Applicant shall implement an archaeological data recovery plan (ADRP) to be prepared by the Applicant. The archaeological consultant, County Department of Planning and Development staff, and Amah Mutsun Tribal Band representative shall consult (as part of one conference call or in-person meeting) on the scope of the ADRP prior to preparation of a draft ADRP.

The ADRP shall be consistent with the requirements of CEQA Guidelines Section 15126.4(b)(3). It shall identify how the proposed data recovery program will preserve the relevant information the archaeological resource contains, identify what scientific/historical research questions are applicable to the resource, what data classes the resource possesses, and how the data classes would address applicable research questions. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. The scope of the ADRP shall also include the following elements:

- Descriptions of proposed field strategies, procedures, and operations;
- Additional measures that should be undertaken if Native American resources are unearthed;
- Description of selected cataloguing system and artifact analysis procedures;
- Description of and rationale for field and post-field discard and deaccession policies;
- Consideration of an off-site public interpretive program during the course of the ADRP;
- Recommended security measures to protect the archaeological resource from vandalism, looting, and non-intentionally damaging activities;
- Description of proposed final report format and distribution of results; and
- Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

The draft ADRP shall be submitted to a designated representative of the Amah Mutsun Tribal Band and to the County Department of Planning and Development for review. The Tribal representative and County shall have two weeks to review and comment on the draft ADRP. The qualified archaeological consultant shall then update the draft ADRP to incorporate relevant comments and resubmit a final ADRP to the County and Tribal representative. Data recovery shall not begin until the County has approved the final ADRP.

e. ***Final Archaeological Resources Report for Known and Unrecorded Resources.*** The Applicant shall retain the services of the archaeological consultant, who shall submit a Draft Final Archaeological Resources Report (FARR) to the County Department of Planning and Development describing the historical significance of discovered archaeological resources and describing the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery programs undertaken. Information that may put at risk (such as resource locations) any archaeological resource shall be provided in a separate removable insert within the final report. Once approved by the County, copies of the FARR (including any formal site recordation forms and/or documentation for nomination to the National Register of Historic Places and California Register of Historic Resources) shall be distributed to the California Archaeological Site Survey Northwest Information Center, County of Santa Clara Department of Planning and Development, and Tribal representative.

Significance after Mitigation: Less than significant

Implementation of Mitigation Measure 3.5-1 would reduce or eliminate ground-disturbing activities in areas of known historical or archaeological resources and require protection of resources that would not be subject to grading. In the event grading in and around these resources cannot be avoided, this mitigation measure would provide for monitoring and stop work procedures to prevent further disturbance in the event of discovery during Project activities as well as identification of the proper procedures for preserving the relevant information the archaeological resource it contains.

Impact 3.5-2: Implementation of the proposed Project could damage unrecorded subsurface prehistoric and historic archaeological resources. (Less than Significant Impact with Mitigation Incorporated)

As discussed in Section 3.5.3.2, the potential for unidentified surface prehistoric archaeological sites to be located within the Project area was assessed using a weighted model recently created for the San Francisco Bay-Delta Region that includes all Santa Clara County (Far Western, 2017). This model takes into account three environmental factors—surface slope, determined using a digital elevation model; distance to a historic-era stream; and distance to a stream confluence. Results identify areas of greater or lesser sensitivity for prehistoric surface sites, which are discussed below with respect to the Project components.

Construction

The processing plant area and areas where access roads are located are rated as having high potential for prehistoric surface sites as well as unidentified historic-area resources. The processing plant and adjacent new rail spur would be graded, potentially disturbing buried, undiscovered resources. Installation of the Tar Creek Bridge could disturb unrecorded subsurface resources. Truck traffic on the access road could also disturb such resources beneath the road bed if there's enough deterioration in its surface. The mining pits would not be excavated during the construction phase. However, portions of the conveyor belt near the Phase 3 and 4 mining area would require minor grading and excavation to establish the access/maintenance road underneath the conveyor belt and to install the supports. These construction activities could disturb buried, undiscovered resources.

Construction of the processing plant, rail spur, and conveyor belt as well as use of access roads by trucks could damage undiscovered subsurface archaeological resources in areas of high sensitivity. Therefore, the construction impact on unrecorded subsurface prehistoric and historic archaeological resources would be **significant.**

Operation

The access roads are located in areas rated as having high potential for prehistoric surface sites as well as unidentified historic-area resources. Operational truck traffic on the access road could disturb such resources beneath the road bed if there's enough deterioration in its surface. The Phase 1 and 2 mining areas are rated as having low potential for prehistoric surface sites and unidentified historic-area resources. However, the location of the permanent overburden stockpile, between the processing plant and the Phase 1 and Phase 2 mining areas, is rated as having a high sensitivity. Placement of this material would not involve excavation at this location. However, ground disturbance might occur during preparation of the site during operations. The Phase 3 and 4 mining areas are also rated as having high sensitivity. Disturbance of undiscovered resources could occur during excavation of these pits.

Because of the archaeological sensitivity of these areas, excavation of the Phase 3 and 4 mining pits, development of the permanent overburden pile, and truck traffic on access roads during operations have the potential to damage unrecorded subsurface prehistoric and historic archaeological resources. Therefore, the construction impact on unrecorded subsurface prehistoric and historic archaeological resources would be **significant.**

Reclamation

The access roads are located in areas rated as having high potential for prehistoric surface sites as well as unidentified historic-area resources. Truck traffic on the access road during final reclamation of the proposed quarry site could disturb such resources beneath the road bed if there's enough deterioration in its surface. The Phase 1 and 2 mining areas are rated as having low potential for prehistoric surface sites and unidentified historic-area resources. Therefore, reclamation of these mining pits would not likely disturb these resources. The Phase 3 and 4 mining areas are rated as having high sensitivity. Disturbance of undiscovered resources could occur during reclamation of these pits as well as removal of the conveyor belt. Reclamation of the processing plant could also disturb undiscovered resources based on its high sensitivity.

Because of the archaeological sensitivity of these areas, reclamation activities associated with the Phase 3 and 4 mining pits, the conveyor belt, and processing plant as well as truck traffic on access roads during final reclamation have the potential to damage unrecorded subsurface prehistoric and historic archaeological resources. Therefore, the construction impact on unrecorded subsurface prehistoric and historic archaeological resources would be **significant.**

Mitigation Measure 3. 5-2: Implement Mitigation Measure 3.5-1.

Significance after Mitigation: Less than significant

Implementation of Mitigation Measure 3.5-1 would reduce impacts to unrecorded subsurface prehistoric and historic archaeological resources during construction, operations, and reclamation by reducing or eliminating ground-disturbing activities in areas of high sensitivity and requiring protection of resources that would not be subject to grading. In the event that grading in and around these resources cannot be avoided, this mitigation measure would provide for monitoring and stop work procedures to prevent further disturbance in the event of discovery during Project activities as well as identification of the proper procedures for preserving the relevant information the archaeological resource to contains.

Impact 3.5-3: The Project could disturb human remains, including those interred outside of dedicated cemeteries. (Less than Significant with Mitigation Incorporated)

Archaeological resources may contain human burials. Portions of the Project area are located within mapped areas of high to highest sensitivity for prehistoric archaeological surface sites and historic-era resources. Human burials are also known to be present at CA-SCL-577/H.

Construction

A portion of Monterey Road passes through CA-SCL-577/H, which is known to contain human burials. Heavy truck traffic during construction could cause enough deterioration in the surface of this road to disturb buried human remains. Construction of the bridge over Tar Creek near CA-SCL-578/H, heavy use of nearby access roads, and grading for the processing plant and rail spur could also potentially disturb unrecorded burials due to these areas being rated as having high sensitivity for prehistoric archaeological surface sites and historic-era resources. The mining pits would not be excavated during the construction phases. However, during construction of the conveyor belt, the upper portion of which is located in a sensitive area, undiscovered human remains would be disturbed. The impact of disturbance of human remains during construction would be **significant.**

Operation

A portion of Monterey Road passes through CA-SCL-577/H, which is known to contain human burials. Heavy truck traffic during Project operations could cause enough deterioration in the surface of this road to disturb buried human remains. Heavy use of access roads in the vicinity of CA-SCL-578/H and the processing plant could similarly disturb human remains. Phases 3 and 4 are located in areas of high sensitivity for prehistoric archaeological surface sites and historic-era resources and would be excavated during this phase. However, the likelihood of human remains being located in these upland areas is relatively low. Nevertheless, the impact of disturbance of human remains during operations would be **significant.**

Reclamation

A portion of Monterey Road passes through CA-SCL-577/H, which is known to contain human burials. Heavy truck traffic during final reclamation of the Project site could cause enough deterioration in the surface of this road to disturb buried human remains. Heavy use of access roads in the vicinity of CA-SCL-578/H and the processing plant could similarly disturb human remains. The Phase 3 and 4 mining pits would undergo final reclamation during this phase, although encountering human remains in these areas is unlikely. Nevertheless, the impact of disturbance of human remains during operations would be **significant.**

> **Mitigation Measure 5.3-3a:** Implement Mitigation Measure 3.5-1.
>
> **Mitigation Measure 3.5-3b:** In the event that human remains are discovered during ground-disturbing activities and/or grading at the site, the Applicant shall stop all activity within a 50-foot radius of the find. The County Coroner shall be notified immediately and shall make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is necessary (as required by Health and

Safety Code Section 7050.5, Public Resources Code Section 5097.98, Title 14 California Code of Regulations Section 15064.5(e), and County Ordinance Number B6-18). If the remains are determined to be Native American, the Coroner shall notify the NAHC within 24 hours of this determination. Once the NAHC identifies the most likely descendants, the descendants shall make recommendations regarding proper burial (including the treatment of grave goods). No further disturbance of the site shall be made except as authorized by the County Coordinator of Indian Affairs and NAHC in accordance with the provisions of state law and the County Ordinance.

Significance after Mitigation: Less than significant

Implementation of Mitigation Measure 3.5-1 would reduce impacts to human remains during construction, operation, and reclamation by reducing or eliminating ground-disturbing activities in known burial areas, such as CA-SCL-577/H, or in sensitive areas where unrecorded human remains may be present or capping these areas to prevent further disturbance. In the event that human remains are discovered, Mitigation Measure 3.5-3b would stop ground-disturbing activities to prevent further damage and require consultation with descendants on proper burial in the event they are determined to be of native American origin.

Impact 3.5-4: The Project would cause a substantial adverse change in the significance of tribal cultural resources. (Significant and Unavoidable)

Three specific TCRs discussed above are located within the footprint of the proposed Project: Betevel Bluff, the SCL-577/H archaeological site, and the CA-SCL-578/H. These resources are also contributing elements of the JTCL. The effects of the Project on these three TCRs are discussed below. The JTCL is the fourth TCR and encompasses, but is not limited to, the other three. Impacts to the JTCL are analyzed in Impact 3.5-5.

Betevel Bluff

This tribal cultural resource is a hill overlooking the confluence of the San Benito and Pajaro Rivers, in southern Santa Clara County. It is eligible under CRHR criteria 1, 2, and 4 because of its association with AMTB ceremonies, with both Kuksui and the powerful headmen who lived and performed the ceremonies, and because of its potential to be used for teaching Tribal members about many of the historic themes identified for this resource: Indigenous Resistance and Survival, and JTCL as Provider, Home, and Place of Power.

Construction

A portion of Betevel Bluff overlaps with Phase 4 mining area. However, excavation of this pit would not occur during construction. The processing plant, rail spur, access road, and roadway improvements are not located near Betevel Bluff. However, the conveyor belt is located near Betevel Bluff. The conveyor belt would begin at the base of Phase 3 and Phase 4 mining pits, which overlap with the Betevel Bluff TCR. Grading and vehicle trips associated with the installation of the conveyor belt at the base of the Betabel Bluff TCR could have substantial adverse effects on this resource. Therefore, the impact of construction on Betevel Bluff would be **significant**.

Operation

The processing plant, rail spur, access road, roadway improvements, are not located near Betevel Bluff, and operation of these Project components would not affect this tribal cultural resource. However, a portion of Betevel Bluff overlaps with the Phase 4 mining area, and operation of the conveyor belt would be adjacent to Betevel Bluff. The excavation of the pit would start at the top of the hill, and remove the upper 200 feet of the hill, which is the likely extent of the aggregate resources in this phase. Sand and gravel would be excavated from west to east using mobile equipment (e.g., scrapers, bulldozers, excavators, and front-end loaders). During mining Phase 4, quarry pit slopes would be maintained with slopes of 2:1 and 10-foot-wide benches every 40 vertical feet. Currently, Betevel Bluff is considered intact for location, setting, association, and feeling (spiritual and cultural significance to the Tribe, as described in Table 3.5-3) but would be significantly altered by this mining phase. Therefore, impacts of Project operations on Betevel Bluff would be **significant**.

Reclamation

The processing plant, rail spur, access road, roadway improvements, are not located near Betevel Bluff. However, the conveyor belt is in proximity to Betevel Bluff. Removal of these components during final reclamation would not affect this resource. Reclamation for Phase 4 would include using remaining stockpiles to fill, compact, and re-soil the pit and process water basin, contour and grade unnecessary internal roads, rip, disk, and re-soil the quarry floor, and re-soil the reclamation slopes and benches. After the area has been graded, topsoil would be placed over the area and reseeded with native and naturalized plant species. Although these activities would lessen the visible scarring of the landscape caused by mining, reclamation of this pit would not completely restore this part of the Betevel Bluff to its original physical form, which would adversely affect its spiritual and cultural significance to the Tribe. Therefore, this impact would be **significant**.

Summary

Construction of the conveyor belt for Phases 3 and 4 and mining of the Phase 4 quarry would significantly alter the physical form of a portion of Betevel Bluff, and reclamation would not completely restore it to the point that its spiritual and cultural significance to the Tribe would not be adversely affected. Therefore, Project operations and reclamation would cause a substantial adverse change in the significance of tribal cultural resource, Betevel Bluff, and this impact would be **significant**.

SCL-577/H

This is a multi-component, indigenous (precolonial) and historic-era archaeological site located at the northern end of the Project Area. It is eligible under CRHR Criterion 1 because it is associated with pre-contact habitation of this area by Ohlone people. contains the evidence, and example, of numerous past traditions, from tool production to ornamentation. It is eligible under CRHR

Criterion 4 because it contains the evidence, and example, of numerous past traditions, from tool production to ornamentation.

Construction

The mining pits, Tar Creek bridge, processing plant, rail spur, and conveyor belt are not located near SCL-577/H. Construction of these components would not affect this resource. The northern portion of Old Monterey Road crosses SCL-577/H. Truck traffic associated with construction would use this road to reach the processing plant and other construction sites. These heavy vehicles could degrade the road, causing damage to burial sites and archaeological deposits, adversely affecting this tribal cultural resource. Therefore, the construction impact on this tribal cultural resource would be **significant**.

Operation

The mining pits, Tar Creek bridge, processing plant, rail spur, and conveyor belt are not located near SCL-577/H. Use of these components during quarry operations would not affect this resource. The northern portion of Old Monterey Road crosses SCL-577/H. Truck traffic during operation of the proposed quarry would use this road to access the processing plant and other sites. These heavy vehicles could degrade the road, causing damage to burial sites and archaeological deposits, adversely affecting this tribal cultural resource. In addition, any improvements or maintenance of the road that occur during operations could also affect this resource. Therefore, this impact of Project operations would be **significant**.

Reclamation

The mining pits, Tar Creek bridge, processing plant, rail spur, and conveyor belt are not located near SCL-577/H. Apart from truck traffic, which is discussed above, removal of these components during final reclamation would not affect this tribal cultural resource. The northern portion of Old Monterey Road crosses SCL-577/H. Truck traffic during operation of the proposed quarry would use this road to reach the processing plant and other sites. These heavy vehicles could degrade the road, causing damage to burial sites and archaeological deposits, adversely affecting this tribal cultural resource. In addition, any improvements or maintenance of the road that occur during final reclamation could also affect this resource. Therefore, the impact of reclamation on this tribal cultural resource would be **significant**.

Summary

Trucks using Old Monterey Road to reach other parts of the Project area during construction, operations, and reclamation, could degrade the road, causing damage to burial sites and archaeological deposits, adversely affecting this tribal cultural resource. Therefore, the proposed Project would cause a substantial adverse change in the significance of a tribal cultural resource, Betevel Bluff, and this impact would be **significant**.

CA-SCL-578/H

This multi-component archaeological site, located in the northeast corner of the Project area, is a contributing element to the JTCL, but it has sufficient importance to the AMTB to be considered as an individual tribal cultural resource under AB 52. CA-SCL-578/H is eligible under Criterion 1 because it is associated with the survival of post-contact Ohlone people. It is eligible under Criterion 4 because it is still important as a location where Tribal people can come to reflect on Ohlone survival during the Mission Period and the connection of this place to the larger JTCL.

Construction

The proposed mining pits, processing plant, rail spur, and conveyor belt are not located near CA-SCL-578/H, so construction of these components would not affect this resource. A free-span bridge is proposed over Tar Creek to provide truck access to the processing plant from Old Monterey Road. Construction of this bridge could result in disturbance of buried historic-era artifacts that are associated with CA-SCL-578/H. In addition, the access road between the bridge and the processing plant is located in the vicinity of CA-SCL-578/H. Truck traffic during construction could degrade the road, causing damage to burial sites and archaeological deposits, adversely affecting this tribal cultural resource. Therefore, the impact of construction on this tribal cultural resource would be **significant**.

Operation

The proposed mining pits, processing plant, rail spur, and conveyor belt are not located near CA-SCL-578/H. Therefore, use of these components during quarry operations would not affect this resource. Use of the Tar Creek bridge during operations would not cause ground disturbance in the vicinity of CA-SCL-578/H. However, truck traffic on the road between the bridge the processing plant could degrade the road to the point of causing damage to burial sites and archaeological deposits that may be buried in the road bed, adversely affecting this tribal cultural resource. Therefore, the impact of Project operations on this tribal cultural resource would be **significant**.

Reclamation

The mining pits, processing plant, rail spur, and conveyor belt are not located near SCL-578/H. Apart from truck traffic, which is discussed above, removal of these components during final reclamation would not affect this tribal cultural resource. Use of the Tar Creek bridge during final reclamation would not cause ground disturbance in the vicinity of CA-SCL-578/H. However, truck traffic on the road between the bridge the processing plant could degrade the road to the point of causing damage to burial sites and archaeological deposits that may be buried in the road bed, adversely affecting this tribal cultural resource. Therefore, the impact of reclamation on this tribal cultural resource would be **significant**.

Summary

Trucks using Old Monterey Road to reach other parts of the Project area during construction, operations, and reclamation, could degrade the road, causing damage to burial sites and archaeological deposits, adversely affecting this tribal cultural resource. In addition, any improvements or maintenance of the road that occur during operations could also affect this resource. Therefore, the proposed Project would cause a substantial adverse change in the significance of a tribal cultural resource, CA-SCL-578/H, and this impact would be **significant.**

Mitigation Measure 3.5-4a: Implement Mitigation Measures 3.5-1 and 3.5-3b.

Mitigation Measure 3.5-4b: To partially offset and compensate for impacts to the three specific TCRs, and to compensate for the loss and disturbance of those portions of the physical landscape of the JTCL that are within the Project site, the property owner/applicant shall record a conservation easement in accordance with Civil Code section 815 et seq. The conservation easement shall be conveyed by the property owner/applicant to any entity identified in Civil Code section 815.3, and verified by the County prior to any ground disturbance. The conservation easement shall include a minimum two acres for every one acre disturbed by the Project (total disturbed acreage of the Project is 403.3 acres), and shall include the Project site itself upon completion of reclamation. In addition, the conservation easement shall include an area outside the Project site of comparable size to the acreage disturbed by the Project. The boundaries of the offsite easement shall be determined by the County in consultation with the Amah Mutsun Tribal Band, and shall include areas and/or resources that are of particular important in their contribution to the JTCL, such as identified tribal cultural resources, riparian areas and /or specific oak trees.

The conservation easement shall prohibit all uses and development that are not already legally occurring prior to Project approval, except for environmental restoration activities, including biological resource compensatory mitigation measures identified in this EIR and restoration of the JTCL, which may be allowed with the appropriate governmental approval and permits. Consistent with Public Resources Code section 21084.3(b)(3), this mitigation measure will ensure the land within the conservation easement is substantially preserved and/or restored in its current natural state, thereby preventing development or disturbance from new uses that could adversely affect the JTCL.

Significance after Mitigation: Significant and Unavoidable

Implementation of Mitigation Measure 3.5-1 would reduce or eliminate ground-disturbing activities in areas of known historical or archaeological resources (SCL-577/H and CA-SCL-578/H), which are also tribal cultural resources, reducing the impact to these resources to less-than-significant levels. In the event that human remains are discovered, Mitigation Measure 3.5-3b would stop ground-disturbing activities in known burial areas, such as CA-SCL-577/H, to prevent further damage and to consult with descendants on proper burial in the event they are determined to be of native American origin. With respect to Betevel Bluff, there is no available alteration to Phase 4 that would avoid or eliminate the substantial adverse change to this TCR that would be caused by excavation and reclamation of this mining pit. Implementation of Mitigation Measure 3.5-4b would partially offset and compensate for impacts to the three TCRs by ensuring that SCL-577/H and 578/H are protected from future disturbance or development. However, because Betevel Bluff would be irreversibly altered, the impact would remain significant even with mitigation.

Impact 3.5-5: The Project would cause a substantial adverse change in the significance of the Juristac Tribal Cultural Landscape (Significant and Unavoidable).

As discussed in Section 3.5.3.5 above, the JTCL is a large landscape that includes the Sargent Hills and the entirety of the proposed Project site. The County has determined this resource is a TCR pursuant to PRC § 21084.2. The landscape is eligible under all four of the California Register of Historical Resources for multiple historic themes (Albion 2021).The JTCL is considered by the Tribe to be sacred terrain where the Tribe's spiritual traditions blended seamlessly with the habitation of the village sites, the numerous natural resources nearby, and the sacred areas of the springs, waterways, and hills. It encompasses the entirety of the proposed Project site, the Sargent Hills, parts of the adjacent waterways, including Sargent Creek, Tar Creek, and Tick Creek. The TCRs discussed under Impact 3.5-4—Betevel Bluff, SCL-577/H, and CA-SCL-578/H—are contributing elements to the JTCL as well as other elements that have not been identified.

Construction

Construction impacts would adversely affect the JTCL and contributing elements of the JTCL. The processing plant, rail spur, and the conveyor belt are located in the JTCL, and installation of the conveyor belt would be near an identified contributing element of the JTCL, the Betevel Bluff. Character defining features of the JTCL 7such as springs, creeks, rivers, topography, vegetation, native habitats, and cultural resources could be impacted during construction of the processing plant, rail spur, and conveyor belt.. The JTCL, which includes the entirety of the proposed Project footprint, may include such resources. Therefore, construction impacts would adversely affect the JTCL.

Construction-related impacts to SCL-577/H and CA-SCL-578/H would occur through truck usage of Old Monterey Road and installation of the free-span bridge over Tar Creek. Construction- related impacts associated with installation of the conveyor belt would adversely affect the Betevel Bluff TCR. Betevel Bluff overlaps with Phase 4 mining area. However, excavation of this pit would not occur during construction. There would not be construction related impacts to the CA-SCL-92/H site because that is located outside of the proposed Project footprint. The impact of Project construction on the JTCL, and contributing elements of the JTCL would be **significant** because there would be a substantial adverse change in the significance of a tribal cultural resource.

Operation

Project operations would result in a substantial adverse change to the JTCL. All four mining phases would irrevocably damage and irreversibly alter character defining features of the JTCL. This impact includes, but is not limited to, alterations to the natural features and habitats of the JTCL that involved the removal and recontouring of landscapes that are held sacred by the AMTB. These physical changes would significantly diminish the emotional and spiritual associations held by the AMTB to this cultural landscape through the alteration of the sacred and spiritual qualities that qualify the JTCL as a TCR.

The processing plant and rail spur are not located near the identified contributing elements of the JTCL, and therefore operation of these components would not affect these resources. As discussed under Impact 3.5-4, operations-related impacts to SCL-577/H and CA-SCL-578/H would occur through truck usage of Old Monterey Road and the section of road between the Tar Creek bridge and the processing plant. However, the Project would not directly affect the CA-SCL-92/H site because it is located outside of the proposed Project footprint. The Betevel Bluff TCR would be substantially altered through excavation of a pit in the Phase 4 mining area, and operation of the conveyor belt near the Betevel Bluff TCR. Operating the conveyor belt would change the visual character of the Betevel Bluff TCR. As a result, the impact of Project operations on the JTCL, and on contributing elements of the JTCL, would be **significant** because there would be a substantial adverse change in the significance of a tribal cultural resources.

Reclamation

Reclamation activities would not restore the JTCL to a condition that reflects its cultural significance. While reclamation activities would restore some of the features of the landscape, it would not restore the site to its pre-Project condition. Further, reclamation activities include the use of heavy truck traffic that would continue to alter the appearance and use of the landscape. There would be a substantial adverse change to the JTCL caused by Project construction, operation, and reclamation, resulting in permanent and irreversible alterations to the physical landscape of the JTCL. These alterations would significantly diminish the emotional and spiritual associations held by the Tribe to this cultural landscape through the destruction of the sacred and spiritual qualities that qualify the JTCL as a TCR.

The processing plant and rail spur are not located near the identified contributing elements of the JTCL. Reclamation of these components would not affect these resources. As discussed under Impact 3.5-4, during reclamation, impacts to SCL-577/H and CA-SCL-578/H would occur through truck usage of Old Monterey Road and the section of road between the Tar Creek bridge and the processing plant. However, the conveyor belt is located near the Betevel Bluff. Betevel Bluff overlaps with the Phase 4 mining area. Reclamation for Phase 4 would include using remaining stockpiles to fill, compact, and re-soil the pit and process water basin, contour and grade unnecessary internal roads, rip, disk, and re-soil the quarry floor, and re-soil the reclamation slopes and benches. Nevertheless, reclamation of this pit would not completely restore this part of the Betevel Bluff to its original physical form, which would adversely affect its spiritual and cultural significance to the Tribe.

As a result, the impact of Project reclamation on the JTCL, these contributing elements of the JTCL, and other contributing elements to the JTCL would be **significant** because there would be a substantial adverse change in the significance of a tribal cultural resource.

Summary

The Project would cause a substantial adverse change to the JTCL. Construction and operation of the processing plant, rail spur, bridge installations, and conveyor belt would alter character defining features of the JTCL such as springs, creeks, rivers, native habitats, and cultural resources. Reclamation of the project would involve heavy truck traffic in the JTCL that would further alter the appearance of the landscape, and reclamation of the Phase 4 pit would not completely restore this part of the Betevel Bluff to its original physical form. As a result, the Project's impact on the

JTCL, and on contributing elements of the JTCL, would be significant because there would be a substantial adverse change in the significance of a tribal cultural resource.

Mitigation Measure 3.5-5a: Implement Mitigation Measures 3.5-1, 3.5-3b, and 3.5-4b.

Mitigation Measure 3.5-5b: Prior to commencement of any vegetation removal or ground disturbance, the Project Applicant shall prepare and submit, to the satisfaction of the Director of Planning, or Director's designee, evidence that the following actions have been satisfied:

i. After seeking consultation with the Amah Mutsun Tribal Band (AMTB), refine the plant list provided in Appendix F of *Gathering Voices Past and Present (2021)* to identify those plants that contribute to the significance of the JTCL as a Tribal Cultural Resource, and that could be present within the Project site.

ii. Prepare a survey of the Project site to identify the plant species identified in the plant list.

iii. Determine the extent of Project impacts based on the number of individuals impacted and the acreage of habitat occupied by each plant species on the plant list. The survey shall be conducted by a qualified plant biologist.

iv. Plant Species:

   (a) For species on the plant list that are also federal or state-listed special-status plant species, implement Mitigation Measure 3.4-1, which requires compensatory mitigation for the loss of special-status plants.

   (b) For species on the plant list that are not federal or state-listed special-status, compensatory mitigation shall be provided by preservation and management of another, existing on-site population if feasible, or if not an off-site population within the JTCL boundary. Habitat occupied by the affected species shall be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acre preserved for each occupied acre affected for the affected plant species).

v. In addition to 1:1 preservation as described in 3.5-5b.iv, the restoration area shall be enhanced by transplanting individual plants or seeds from the Project site as appropriate.

vi. Plant species in the preservation areas shall be monitored using specific, objective final criteria and performance criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule. At a minimum, performance criteria shall include demonstration that any plant population fluctuations over the monitoring period do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be attributed to management (i.e., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management).

Significance after Mitigation: Significant and Unavoidable

As discussed under Impact 3.5-4, implementation of Mitigation Measures 3.5-1 and 3.5-3b would reduce the impacts of the Project during construction, operation, and reclamation on the tribal cultural resources of SCL-577/H and CA-SCL-578/H through a combination of avoidance, stop-work and resource preservation procedures. Mitigation

Measure 3.5-5b would reduce impacts to plant species that contribute to the significance of the JTCL as a TCR. The mitigation measure would reduce the impact through surveys, preparing a comprehensive list in consultation with the AMTB, compensating for the loss of listed and non-listed species, and restoring impacted areas. With respect to Betevel Bluff, there is no available alteration to Phase 4 that would avoid or eliminate the substantial adverse change to this TCR, a contributing element of the JTCL, that would be caused by excavation and reclamation of this mining pit.[9]

With respect to the JTCL as a whole, the installation of equipment, grading, mining, and reclaiming the site would substantially change the JTCL post-mitigation through altering character defining features of the JTCL such as topography, springs, creeks, rivers, native habitats, and other natural and cultural resources. Mitigation Measure 3.4-4b would partially offset and compensate for the impacts on the JTCL by placing a portion of the JTCL, in a conservation easement. The Project site itself would be included in the conservation easement after reclamation is complete, which would protect SCL-577/H and CA-SCL-578/H from future disturbance, as well as any features within the Project site that would be restored through reclamation (e.g., vegetation, creek crossings). Because the Project site would be substantially altered even after reclamation, placing it in a conservation easement would only partially offset the impact of the Project on the JTCL. Therefore, additional acreage, equivalent to the size of the area disturbed by the Project, would also be placed in a conservation easement. The lands within this easement would be protected from further development or disturbance, except for activities that currently occur there and possible environmental restoration activities, such as biological habitat and/or other plant restoration. However, because the Project site would be irreversibly altered, the impact would remain significant. There is no feasible mitigation that would avoid or further reduce the substantial adverse changes to the JTCL.

3.5.4.3 Cumulative Analysis

The geographic area for evaluation of cumulative impacts on cultural and tribal cultural resources is the Project area and vicinity. The only project identified in Section 3.1 located within the vicinity of the Project site is the U.S. 101 Widening Project, which would be located adjacent to the east and south of the Project site.

Impact 3.5-6: The Project could contribute to cumulative adverse changes in known historical or archaeological resources. (Less Than Significant with Mitigation Incorporated)

The 2013 EIR for the U.S. 101 widening project identified SCL-577/H as a known archaeological site, which is eligible for the national and California registers, that could be adversely affected by subsurface excavation such as utility work, foundation/bridge pier trenches and driving as well as surface related construction, such as staging. However, the EIR determined that this impact would be less than significant through implementation of mitigation of an Archaeological Treatment

9 Alternative 2: Phases 1 and 2 Only (Section 4.5.2 of Alternatives Analysis) would reduce the impact to the JTCL by eliminating Phase 4 mining. However, even under this alternative, the impact to JTCL would be Significant and Unavoidable because project construction, operation, and reclamation would result in substantial adverse changes to character defining elements such as landforms, natural features, and cultural resources that comprise the JTCL.

Plan and construction monitoring. Therefore, the cumulative impact with respect to adverse changes in known historical or archaeological resources would be **less than significant**.

Project Contribution

As discussed in Impact 3.5-1, the proposed Sargent Quarry Project could also cause damage to SCL-577/H through the use of Old Monterey Road by heavy trucks, which could cause deterioration of the road surface. However, this impact could be mitigated to a less-than-significant level. Therefore, post-mitigation the Project's cumulative contribution would not be considerable, and the cumulative impact on known historic or archaeological resources would be less-than-cumulatively considerable and **less than significant**.

Mitigation Measure 3.5-6: Implement Mitigation Measure 3.5-1.

Significance After Mitigation: Less than Significant

Impact 3.5-7: The Project could contribute to cumulative adverse changes in unrecorded subsurface prehistoric and historic archaeological resources. (Less than Significant with Mitigation Incorporated)

The 2013 EIR for the U.S. 101 widening project did not evaluate impacts on unrecorded subsurface prehistoric and historic archaeological resources as a separate impact. But given that ground-disturbing activities of that highway construction project would occur in the vicinity of areas that are known to have high potential for prehistoric surface sites as well as unidentified historic-area resources, the cumulative impact with respect to adverse changes in unrecorded subsurface prehistoric and historic archaeological resources would be **significant**.

Project Contribution

The proposed Sargent Quarry Project would also cause impacts on unrecorded resources through construction, operations, and reclamation, and these impacts would be cumulatively considerable pre-mitigation. However, as discussed in Impact 3.5-2, this impact would be mitigated to a less-than-significant level. Mitigation Measure 3.5-1 would require avoiding areas of known archaeological resources, testing for areas of recorded and unknown resources with a monitor from the tribe, archaeological monitoring developed in consultation with the AMTB, and a data recovery program for known and unknown resources. Lastly, Mitigation Measure 3.5-1 would require drafting a final archaeological report for known and unknown resources Therefore, post-mitigation the Project's cumulative contribution would not be considerable, and the cumulative impact on unrecorded subsurface prehistoric and historic archaeological resources would be **less than significant**.

Mitigation Measure 3.5-7: Implement Mitigation Measure 3.5-1.

Significance After Mitigation: Less than Significant

Impact 3.5-8: The Project could contribute to cumulative disturbance of human remains, including those interred outside of dedicated cemeteries. (Less than Significant with Mitigation Incorporated)

The 2013 EIR for the U.S. 101 widening project did not evaluate impacts on human remains. However, SCL-577/H, which could be adversely affect by construction activities, is known to contain human burials. Therefore, the cumulative impact with respect to disturbance of human remains would be **significant**.

Project Contribution

As discussed in Impact 3.5-3, the proposed Sargent Quarry Project could also disturb human remains within SCL-577/H through the use of Old Monterey Road by heavy trucks, which could cause deterioration of the road surface, and this impact would be cumulatively considerable pre-mitigation. However, this impact would be mitigated to a less-than-significant level. Implementation of Mitigation Measure 3.5-3 would reduce impacts to human remains during construction, operation, and reclamation by reducing or eliminating ground-disturbing activities in known burial areas, such as CA-SCL-577/H, or in sensitive areas where unrecorded human remains may be present or capping these areas to prevent further disturbance. Therefore, post-mitigation the Project's cumulative contribution would not be considerable, and the cumulative impact on known historic or archaeological resources would be **less than significant**.

> **Mitigation Measure 3.5-8**: Implement Mitigation Measures 3.5-1 and 3.5-3b.
>
> **Significance After Mitigation:** Less than Significant

Impact 3.5-9: The Project could contribute to cumulative adverse changes in the significance of tribal cultural resources. (Significant and Unavoidable)

The 2013 EIR for the U.S. 101 widening project did not evaluate impacts on tribal cultural resources, but that does not indicate an absence of impacts to such resources as a result of the project. As discussed under Impact 3.5-6, that EIR did find that project construction activities could adversely affect SCL-577/H, which is a tribal cultural resource and a contributing element of the JTCL. The EIR concluded the impact of construction on SCL-577/H would be less than significant through implementation of mitigation that included an Archaeological Treatment Plan and construction monitoring. The 2013 EIR for the U.S. 101 widening project did not identify SCL-578/H as a site that would be affected by project construction. In addition, the U.S. 101 widening project is not located in the vicinity of Betevel Bluff.

However, regarding cumulative impacts on the JTCL, the full extent of the JTCL is not known; the U.S. 101 widening project could add to the Project's impacts on altering character- defining features of the JTCL such as topography, springs, creeks, rivers, native habitats, and other natural and cultural resources; and there may be other contributing elements that have not yet been identified that could be adversely affected. Therefore, the cumulative impact with respect to adverse changes in the significance of tribal cultural resources would be **significant**.

Project Contribution

The proposed Sargent Quarry Project could also cause damage to SCL-577/H through the use of Old Monterey Road by heavy trucks, which could cause deterioration of the road surface and these impacts would be cumulatively considerable pre-mitigation. However, this impact would be mitigated to a less-than-significant level through capping the road to protect resources that may be damaged by heavy truck traffic and by installing fencing to prevent vehicles from leaving the road. Therefore, post-mitigation the Project's contribution to a cumulative impact on this tribal resource would not be cumulatively considerable. In addition, because the U.S. 101 widening project would not affect SCL-578/H or Betevel Bluff, there would be no cumulative effect on these resources.

However, as noted above, the full extent of the JTCL is not known; the U.S. 101 widening project could add to the Project's impacts on altering character- defining features of the JTCL such as topography, springs, creeks, rivers, native habitats, and other natural and cultural resources; and there may be other contributing elements that have not yet been identified. Therefore, pre-mitigation the Project's cumulative contribution to impacts on TCRs would be considerable. Mitigation Measures 3.5-1, 3.5-3b, 3.5-4b, and 3.5-5b would reduce Project impacts to the affected TCRs, but would not fully offset the alterations to the TCRs in the Project site and the JTCL. Therefore, post-mitigation the Project's cumulative contribution would be considerable, and the cumulative impact on would be **significant**.

> **Mitigation**: Implement Mitigation Measures 3.5-1, 3.5-3b, 3.5-4b and 3.5-5b.
>
> **Significance After Mitigation:** Significant and Unavoidable

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3.5.5 References

Albion, 2021. Gathering Voices of the Past and Present, An Ethnohistoric and Ethnographic Study of Sargent Ranch, Santa Clara County, California, September; and TCR Memo Update for Sargent Ranch, January 28, 2022 (Confidential)

Far Western Anthropological Research Group, Inc. 2017a. Cultural Resources Sensitivity Assessment for the Sargent Ranch Project. (Confidential)

Far Western Anthropological Research Group, Inc. 2017b. Supplemental Cultural Resources Survey Report for the Sargent Ranch Quarry Project, Santa Clara County, California. (Confidential)

Santa Clara Valley Transportation Agency. 2013. Final Environmental Impact Report, U.S. 101 Improvement Project between Monterey Street and State Route 129.

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3.6 Energy

3.6.1 Introduction

This section examines the Project's energy characteristics to determine whether the Project could result in inefficient, wasteful, and unnecessary consumption of energy. No natural gas would be used for the Project; therefore, only electricity and transportation fuels are discussed in this section. The analysis incorporates information from an air quality and greenhouse gas analysis that was prepared for the Project site dated July 16, 2021, by Illingworth & Rodkin, Inc. (Appendix D), and calculations done for this analysis are provided in Appendix F.

3.6.2 Regulatory Setting

3.6.2.1 Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (NECPA, 42 USC Section 8201 et seq.) serves as the underlying authority for federal energy management goals and requirements and is the foundation of most federal energy requirements. NECPA established energy-efficiency standards for consumer projects and includes, among other things, energy-efficiency standards for new construction.

Corporate Average Fuel Economy Standards

Section 3.3, *Air Quality*, details federally established fuel economy standards by the U.S. Environmental Protection Agency (USEPA) and National Highway Traffic Safety Administration (NHTSA). NHTSA's Corporate Average Fuel Economy (CAFE) standards regulate how far vehicles must travel on a gallon of fuel. NHTSA sets CAFE standards for passenger cars and for light trucks (collectively, "light-duty vehicles"), and separately sets fuel consumption standards for medium- and heavy-duty trucks and engines. In the course of more than 30 years, this regulatory program has resulted in improved fuel economy throughout the United States' vehicle fleet (NHTSA 2014, 2019).

3.6.2.2 State

Warren-Alquist Act

The 1975 Warren-Alquist Act (Pub. Res. Code Section 25000 et seq.) established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The Act also was the driving force behind the creation of Appendix F to the CEQA Guidelines.

State of California Integrated Energy Policy

Public Resources Code Section 25301(a) requires the CEC to develop an integrated energy plan at least every two (2) years for electricity, natural gas, and transportation fuels. 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 and energy costs. An overarching goal of the resulting Integrated Energy Policy Report (IEPR) is to achieve the statewide greenhouse gas (GHG) emission reduction targets, while improving overall energy efficiency (CEC 2020a).

Advanced Clean Cars Program for Light Duty Vehicles

The California Air Resources Board (CARB) Advanced Clean Cars combines the control of smog-causing (criteria) pollutants and GHG emissions into a single coordinated package of regulations: the Low-Emission Vehicle (LEV) regulation for criteria and GHG emissions, and a technology forcing regulation for zero-emission vehicles (ZEV) that contributes to both types of emission reductions.

Advanced Clean Cars I was first adopted by CARB in 2012, including LEV III Criteria, LEV III GHG, and ZEV regulation amendments. The LEV III GHG component was developed in coordination with the USEPA and NHTSA for One National Program to harmonize GHG and fuel economy standards. Advanced Clean Cars II is currently in process to establish the next set of LEV and ZEV requirements to contribute to meeting federal ambient air quality ozone standards and California's carbon neutrality targets (CARB 2021).

Renewables Portfolio Standard

The State of California adopted standards to increase the percentage that retail sellers of electricity, including investor-owned utilities and community choice aggregators, must provide from renewable resources. The standards are referred to as the renewable portfolio standards (RPS). The RPS program was established by Senate Bill 1078 in 2002 and required electric utilities and other entities under the jurisdiction of the California Public Utilities Commission (CPUC) to meet 20 percent of their retail sales with renewable power by 2017. Qualifying renewables under the RPS include bioenergy such as biogas and biomass, small hydroelectric facilities (30 megawatts (MW) or less), wind, solar, and geothermal energy. The CPUC and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy (CPUC 2021).

Senate Bill 350 – Clean Energy and Pollution Reduction Act of 2015

Senate Bill (SB) 350, known as the Clean Energy and Pollution Reduction Act of 2015, was enacted on October 7, 2015. It provides a new set of objectives in clean energy, clean air, and pollution reduction by 2030. The objectives include the following:

1. To increase from 33 percent to 50 percent by December 31, 2030, the procurement of electricity from renewable sources.
2. To double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Senate Bill 100

On September 10, 2018, Governor Brown signed Senate Bill 100 (SB 100), establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also created new standards for the RPS goals that were established by SB 350 in 2015. Specifically, the bill increases required energy from renewable sources for both investor-owned and publicly owned utilities from 50 percent to 60 percent by 2030. Incrementally, these energy providers also are required to have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. The updated RPS goals are considered achievable, since many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

Energy-efficient Building Standards and California Green Building Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings specified in Title 24, Part 6 of the California Code of Regulations include requirements for non-residential building lighting, insulation, ventilation, and mechanical systems (CEC 2018). Its provisions would be relevant to the Project's proposed processing facility.

The Code (CALGreen, Title 24 Part 11) is a statewide regulatory code for all buildings. CALGreen is intended to encourage more sustainable and environmentally friendly building practices, require use of low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment (CBSC 2019).

3.6.2.3 Local

Santa Clara County General Plan

Part 2, Countywide Issues & Policies, and Part 3, Rural Unincorporated Area Issues & Policies, of the Santa Clara County General Plan includes the following policies relevant to the Project and energy (County of Santa Clara, 1994):

> ***Resources Conservation Policy C-RC 77:*** Energy efficiency and conservation efforts in the transportation, industrial, commercial, residential, agricultural, and public sectors shall be encouraged at the local, county (subregional), and regional level.
>
> ***Resources Conservation Policy C-RC 78:*** The objectives of the state energy plan should be implemented at the local and regional level through an overall strategy consisting of:
>
> a. reducing transportation energy demand and oil-dependency;
> b. conserving energy in residential, commercial, agricultural, and industrial sectors; and
> c. increasing consumer and general public awareness through education.
>
> ***Resources Conservation Policy C-RC 83:*** Industrial and agricultural processes should be modified wherever feasible to take advantage of energy savings, to reduce operational costs, and to enhance competitiveness.
>
> ***Resource Conservation Policy R-RC 78***: Access to new quarry sites should make maximum use of major thoroughfares, such as expressways, freeways, and designated

truck routes, avoiding impacts upon local-serving routes. Where feasible, alternatives to truck transport should be encouraged.

3.6.3 Environmental Setting

3.6.3.1 State

Total energy usage in California was 7,802 trillion British Thermal Units (Btus) in 2019 (the most recent year for which specific data are available), which equates to an average of 198 million Btus per capita. These figures place California second among the nation's 50 states in total energy use and 50th in per capita consumption (EIA 2021a).

Electricity

In 2019, total system electricity generation for California was 277,704 gigawatt-hours (GWh), down 2.7 percent from 2018's total generation of 285,488 GWh. Approximately 72 percent of the electrical power needed to meet California's demand is produced in the state; the balance, approximately 28 percent, is imported from the Pacific Northwest and the Southwest.

In 2019, California's in-state electricity generation was derived from natural gas; large hydroelectric resources; nuclear sources; oil and coal; and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar. Refer to Table 3.6-1 for the breakdown of California's in-state electricity generation by percent of source type.

TABLE 3.6-1
CALIFORNIA IN-STATE ELECTRICITY GENERATION SOURCES (2019)

Source Type	Percent
Natural Gas	43%
Large Hydroelectric Resources	17%
Nuclear	8%
Oil and Coal	<1%
Renewable Resources	32%

SOURCE: CEC 2021a.

Of the approximately 64,336 GWh generated from renewable sources in the state, solar-generated electricity made up the highest proportion (44 percent), followed by wind (21 percent), geothermal (17 percent), biomass (9 percent), and small hydroelectric (8 percent) (CEC 2021a).

Transportation Fuels

Gasoline and diesel, both derived from petroleum (also known as crude oil), are the two most common fuels used for vehicular travel. Approximately 85 percent of the petroleum consumed in California is used in the transportation sector (EIA 2021a). In 2019, approximately 30 percent of California's crude oil was produced within the state, about 12 percent was produced in Alaska, and the remaining 58 percent was produced in foreign lands (CEC 2021b).

In 2019, taxable gasoline sales (including aviation gasoline) in California accounted for approximately 15.4 billion gallons of gasoline (CDTFA 2021a), and taxable diesel fuel sales accounted for approximately 3.1 billion gallons of diesel fuel (CDTFA 2021b). Statewide, there was an overall decrease in gasoline and diesel consumption from 2007 to 2011 due to the economic recession, but consumption has increased since then. The economic shutdown associated with the COVID-19 Pandemic and other related disruptions to the overall economy also decreased gasoline and diesel consumption throughout 2020 and 2021.

Although California imports approximately 70 percent of its crude oil, nearly all of the State's demand for refined products, including gasoline, diesel, and aviation gasoline fuel—is met by California refineries (CEC 2014). Refineries in California often operate at or near maximum capacity because of the high demand for petroleum products. When unplanned refinery outages occur, replacement supplies must be brought in by marine tanker from refineries in the state of Washington or on the U.S. Gulf Coast.

California requires that all motorists use, at a minimum, a specific blend of motor gasoline called California Reformulated Gasoline (CaRFG) as part of an overall program to reduce emissions from motor vehicles. Refineries in several other countries can also supply CaRFG, although it can take several weeks to locate and transport replacement motor gasoline that conforms to California's strict fuel specifications (EIA 2021a). As a result, unplanned outages often result in a reduction in supply that causes prices to increase, sometimes dramatically. The severity and duration of these price spikes depend on how quickly the refinery issue can be resolved and how soon supply from alternative sources can reach the affected market (EIA 2015).

Most petroleum supply disruptions or shortage events are resolved by the energy industry before they become significant. However, there are instances where the severity and scope of disasters require additional actions by the government to help facilitate and coordinate response and recovery efforts (NASEO 2018).

3.6.3.2 Regional

Pacific Gas & Electric Company

Pacific Gas & Electric Company (PG&E) is an investor-owned utility company that provides electricity supplies and services throughout a 70,000-square-mile service area that extends from Eureka in the north, to Bakersfield in the south, and from the Pacific Ocean in the west, to the Sierra Nevada mountains in the east. Santa Clara County is within PG&E's service area for electricity. Operating characteristics of PG&E's electricity supply and distribution systems are provided below. Also discussed is the regional consumption of transportation fuels.

PG&E also provides natural gas to consumers in many parts of the state; however, because the Project would not use natural gas, the amount that is supplied is not discussed below.

PG&E Electric Utility Operations

PG&E provides "bundled" services (i.e., electricity, transmission, and distribution services) to most of the six million customers in its service territory, including residential, commercial, industrial, and agricultural consumers. In recent years, PG&E has improved its electric transmission and distribution systems to accommodate the integration of new renewable energy resources, distributed generation resources, and energy storage facilities, and to help create a platform for the development of resilient grid technologies (PG&E 2021).

In 2020, PG&E generated and/or procured a total of 35,838 GWh of electricity.[1] PG&E owns approximately 7,662 MW of generating capacity, itemized below (see **Table 3.6-2**). The remaining electrical power is purchased from other sources in and outside of California.

TABLE 3.6-2
PG&E-OWNED ELECTRICITY GENERATING SOURCES (2019)

Source	Generating Capacity (MW)
Nuclear (Diablo Canyon-2 reactors)	2,240
Hydroelectric	3,867
Fossil Fuel-Fired	1,400
Fuel Cell	3
Solar Photovoltaic (13 units;12 in Fresno County, 1 in Kings County)	152
Total	7,662

SOURCE: PG&E 2021.

Renewable Energy Resources

California law (RPS) requires load-serving entities, such as PG&E, to gradually increase the amount of renewable energy they deliver to their customers. The RPS program requires the amount of renewable energy that must be delivered by most load-serving entities to be at least 33 percent of total annual retail sales by 2020, at least 60 percent by 2030, and 100 percent by 2045.

Renewable generation resources, for purposes of the RPS program, include bioenergy such as biogas and biomass, certain hydroelectric facilities (30 MW or less), wind, solar, and geothermal energy. As shown in **Table 3.6-3**, during 2020, 35.6 percent of PG&E's energy deliveries were from renewable energy sources (PG&E 2021).

TABLE 3.6-3
PG&E 2018 RENEWABLE ENERGY SOURCES

Source	Percent of Total Energy Portfolio
Solar	16.1
Wind	12.9
Bioenergy	2.8
Geothermal	2.6
RPS-Eligible Hydroelectric	1.2
Total	**35.6**

SOURCE: PG&E 2021.

[1] This amount excludes electricity provided to direct access customers and Community Choice Aggregation (CCA) entities who procure their own supplies of electricity.

Electricity Consumption

Table 3.6-4 shows electricity consumption by sector in the PG&E service area based on the latest available data from the CEC. As shown in the table, PG&E delivered approximately 78 billion kilowatt-hours (kWh) in 2019, of which approximately 1.6 billion kWh were consumed by the mining and construction sector.

TABLE 3.6-4
ELECTRICITY CONSUMPTION IN PG&E SERVICE AREA (2019)

Agricultural and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
All Usage Expressed in Millions of kWh (GWh)							
4,490	29,560	4,349	9,710	1,642	28,014	308	78,072

SOURCE: CEC 2021c.

3.6.3.3 Local

Silicon Valley Clean Energy

As stated in Chapter 2, the Project would obtain electricity from Silicon Valley Clean Energy (SVCE), a community-governed, local power supplier that provides renewable and nearly 100 percent carbon-free electricity to unincorporated Santa Clara County residents and businesses under Silicon Valley's community choice energy (CCE) program. Under a CCE program, the utility company (in this case PG&E) continues to deliver and service the electricity through its existing utility lines and provide billing and customer service (SVCE 2021).

Local Energy Infrastructure

Existing electrical infrastructure in the Project vicinity includes transmission lines. The existing 100-161 kilovolt (kV) transmission lines run generally north-south on the east side of US 101 to the east of the Project site (PG&E 2021). Existing electrical infrastructure on the Project site includes lower voltage distribution electric power lines.

Electricity Use in Santa Clara County

In Santa Clara County, approximately 16.7 billion kWh of electricity was consumed in 2019, with approximately 12.6 billion kWh consumed by non-residential uses (CEC 2021c).

Gasoline and Diesel

The CEC estimates that 713 million gallons of gasoline and 89 million gallons of diesel were sold in 2019 in Santa Clara County. Approximately 174 million gallons of gasoline and 55 million gallons of diesel were sold in 2019 in Monterey County, and 21 million gallons of gasoline and less than 6 million gallons of diesel were sold in 2019 in San Benito County.[2] It is also estimated

2 The data for diesel sales in 2019 for San Benito County was combined with Alpine, Modoc, Sierra, and Trinity Counties. As such, the amount of diesel sold would be less than 6 million gallons.

that there were 404 gasoline stations in Santa Clara County, 142 gasoline stations in Monterey County, and 18 gasoline stations in San Benito County in 2019 (CEC 2020b).

3.6.3.4 Project Site

Minimal amounts of electricity are consumed by existing uses at Sargent Ranch, including the Project site. Electricity is consumed by limited site lighting and a well pump. The cattle ranch staff vehicles traveling to and from the site, and limited farm equipment uses small amounts of gasoline and diesel fuel.

3.6.4 Impact Evaluation

3.6.4.1 Approach to the Analysis

This impact analysis evaluates the potential for the Project to result in a substantial increase in energy demand and/or wasteful use of energy during Project construction, operation and maintenance, and decommissioning. The impact analysis is informed by Appendix F of the CEQA Guidelines. The impacts are analyzed based on an evaluation of whether construction and operational (including reclamation) energy use for the Project would be considered excessive, wasteful, or inefficient, or conflict with renewable energy or energy efficiency plans. Energy use details supporting the Project estimates presented in this section also are presented in Section 3.8, *Greenhouse Gas Emissions*. For the purposes of defining the environmental baseline for this analysis, and to be conservative, the energy currently being used at the Project site was assumed to be zero.

3.6.4.2 Significance Criteria

The project would result in a significant impact on energy if it would:

a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use 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.

3.6.4.3 Project Impacts

Impact 3.6-1: Construction, operation and maintenance, and reclamation of the Project would increase the use of energy resources, but would not result in significant wasteful, inefficient, or unnecessary consumption of energy. (Less than Significant)

This impact discussion corresponds to Significance Criterion (a).

The analysis in this section uses the assumptions identified in Appendix D, *Sargent Quarry Air Quality and Greenhouse Gas Emissions Assessment*. Because the California Emissions Estimator Model (CalEEMod) program and other sources used in this technical analysis do not display the amount and fuel type for construction-related sources, additional calculations were conducted and are summarized in **Tables 3.6-5** and **3.6-6** below and provided in **Appendix F**, *Energy: Fuel Use Calculations*.

TABLE 3.6-5
PROJECT ENERGY CONSUMPTION DURING CONSTRUCTION (TOTAL)

Type (use)	Quantity	Units	Energy (MMBtu)[a]
Initial Construction Period			
Diesel (construction equipment and trucks)	23,240	gallons	3,193
Gasoline (worker vehicles)	841	gallons	101
Subtotal	-	-	**3,294**
Monterey Road Maintenance (every 5 years)			
Diesel (construction equipment and trucks)	796	gallons	109
Gasoline (worker vehicles)	94	gallons	11
Subtotal	-	-	**120**
Subtotal over 30-year Project	-	-	**720**
Total Construction			
Diesel	28,011	gallons	3,848
Gasoline	1,405	gallons	169
Total	-	-	**4,017**

NOTES:
MMBtu = million British thermal unit
kWh = kilowatt-hours
a. Based on U.S. Energy Information Administration (EIA) conversion factors.

SOURCE: Data compiled by Environmental Science Associates in 2021 (see Appendix F); EIA 2021b.

TABLE 3.6-6
ANNUAL PROJECT ENERGY CONSUMPTION DURING OPERATION AND RECLAMATION

Type (use)	Quantity	Units	Energy (MMBtu)[a]
Electricity			
Processing Plant, Processing Equipment, Conveyor Belt	1,250,000	kWh	4,265
Diesel			
Operational Equipment	219,853	gallons	30,204
Emergency Generator	147	gallons	20
On-site Vehicles	10,490	gallons	1,441
Off-site Trucks	507,640	gallons	69,740
Rail	23,604	gallons	3,243
Gasoline			
Operational light-duty truck, Employee vehicles	7,130	gallons	858
Total	-	-	**109,771**

NOTES:
MMBtu = million British thermal unit
kWh = kilowatt-hours
a. Based on U.S. Energy Information Administration (EIA) conversion factors.

SOURCE: Data compiled by Environmental Science Associates in 2021 (see Appendix F); EIA 2021b.

Construction

During the construction phase of the Project, diesel and gasoline would be expended by earthmoving vehicles, haul truck trips required to deliver materials and equipment to the site, construction worker vehicle trips to and from the site, and other diesel-powered construction equipment. In total, Project construction would consume a total of approximately 28,011 gallons of diesel fuel from construction equipment and haul truck trips and approximately 1,405 gallons of gasoline from construction worker vehicle trips.

Project fuel use during construction would represent approximately 0.03 percent of diesel and less than 0.0002 percent of gasoline sold in Santa Clara County in 2019 (CEC 2020b). Construction activities and the corresponding fuel energy consumption would be temporary and localized. Additionally, as described below, the use of heavy-duty equipment for construction would be minimal as compared to the amount of heavy-duty equipment needed during operation. Further, construction equipment and vehicles would be industry-standard, designed to comply with all applicable fuel efficiency standards. Therefore, construction-related fuel consumption by the Project would not result in inefficient, wasteful, or unnecessary energy use compared with other construction equipment and vehicles used in the region, and the impact would be **less than significant**.

Operation

Mining Pits, Processing Plant, Conveyor Belt, Rail Spur, Access Road, Roadway Improvements

With respect to energy use, the Project components are interrelated, and therefore considered together. For example, diesel use associated with transporting Project product is affected by both haul truck trips and train trips. By using trains, the Project would partially reduce its need for off-site haul trips. Similarly, the employees who would use gasoline to commute to the Project site would be employed at both the processing plant and the quarries. For the reasons discussed below, energy use during operation would be a **less-than-significant impact**.

Diesel Consumption

Equipment used for excavation, grading, and material handling and hauling activities during project operation would include a dozer, an excavator, four-wheel loaders, and a motor grader. Other vehicles that would be used on site would include two 10,000-gallon water trucks, one 4,000-gallon water truck, a food service truck, and two pick-up trucks. With the exception of one pick-up truck, all vehicles would use diesel fuel. The Project would also require diesel for off-site haul truck trips and an on-site emergency generator. Project diesel use from equipment during operation and off-site haul truck trips is estimated to be 738,129 gallons per year and would represent approximately 0.83 percent of diesel sold in Santa Clara County in 2019 (CEC 2020b). The use of heavy-duty equipment is an essential component of sand and gravel surface mining operations and represents the second most intensive use of diesel fuel behind truck trips off-site to transport construction aggregates. However, equipment and vehicles would be industry-standard, designed to comply with all applicable fuel efficiency standards. In addition, the Project would also transport product by train, using the Union Pacific Railroad rail spur proposed to be extended from its undercrossing of the U.S. 101 to the processing area. Using trains would reduce the extent to which haul trucks were needed for transporting product. Rail operation would require approximate 23,604 gallons of diesel per year to transport a maximum of 249,600 tons per year, which represents approximately 22 percent of maximum product sold in a single year. In contrast, the haul trucks used to transport product are estimated to use approximately 507,640 gallons a year to transport 892,800 tons per year, demonstrating that trains are more efficient.

Total Project diesel use during operation is estimated to be 761,734 gallons and would represent approximately 0.86 percent of diesel sold in Santa Clara County in 2019 (CEC 2020b). The Project would also include an electric-powered conveyor belt to transport mined material onsite that would reduce the need for additional onsite truck trips. Because the amount of diesel fuel consumed during Project operation would be minimized due to the use of the rail spur and conveyor belt, it would not constitute a wasteful, inefficient, or unnecessary use of diesel fuel.

Gasoline Consumption

The Project would have up to 15 employees on-site at any one time for surface mining activities. One light-duty truck using gasoline would be used during operation. Gasoline also would be required by Project workers commuting to and from the Project site. The total mobile emissions rates (Appendix D) during operation yield a conservative estimate of 7,130 gallons of gasoline required annually during Project operation. The gasoline consumption by Project workers would be approximately 0.001 percent of gasoline consumed in Santa Clara County in 2019 (CEC 2020b).

The Project would have a relatively small number of employees drawn from the surrounding region. Employees would arrive before the peak commute hour, which would shorten travel time. The commute and employee vehicle use would otherwise be typical for such operations in the region. There are no aspects of the Project that would result in a wasteful, inefficient, or unnecessary use of gasoline.

Electricity Use

The Project would use existing electric power lines during mining operations. Electricity provided by SVCE would be the source of power for the aggregate processing plant, office/scale house, and other facilities. To transport mined material from the Phase 1 and Phase 2 mining areas to the processing plant, an approximately 0.3-mile-long electric-powered conveyor belt would be constructed. A similar conveyor belt, 1.6 miles in length, would be extended to the Phase 3 and Phase 4 mining area following completion of Phase 2 mining.

The Project would require approximately 1,250 megawatt-hours per year of electricity (Illingworth and Rodkin, Inc. 2021). This equates to approximately 1,250,000 kWh per year. For comparison, this energy consumption would be approximately 0.21 percent of the electricity consumption for the construction and mining sector in PG&E’s service area in 2019 (CEC 2021c).

The Project would not include any components that would require unusual amounts of electricity. As discussed further below under Impact 3.6-2, most of the electricity consumed by Project operation would occur during daylight hours, minimizing the need for electric-powered lighting. Additionally, the level of activity at the quarry would be highest during the active mining season (between April and October) during daylight hours, when the availability of energy from renewable and carbon-free sources from the electrical grid (such as solar power) is at its peak (EERE 2017).

The Project would be required to comply with current Title 24 standards and the CalGreen code, which would promote energy efficiency. Provisions in Title 24 include consideration and possible incorporation of new energy efficiency technologies and methods for building features such as space conditioning, water heating, and lighting, as well as construction waste diversion goals. In addition, the Project incorporates renewable energy features because it would use SCVE as its source of electricity. SCVE provides nearly 100 percent carbon-free electricity. Thus, the electricity required during Project operation would not constitute a wasteful, inefficient, or unnecessary use of energy.

Reclamation

Mining operations would be conducted for 30 years, in four phases, and portions of the site would be reclaimed upon completion of each phase of the quarry operation. At the end of the Project's life, final reclamation of the last surface mining phase would occur, and the aggregate processing facility site would also be reclaimed. The types of equipment, vehicles, and workforce necessary for grading and final contouring would be the same as the equipment used for mining and is included in the fuel consumption estimates provided under *Operation*, above. Revegetation and monitoring would require an additional two employees, who would commute to the Project site intermittently, and then use their vehicles to travel throughout the reclamation areas. These activities would add slightly to total Project fuel consumption but would not represent a substantial demand on energy resources. Therefore, energy consumption during reclamation would be a **less-than-significant impact.**

Summary

As shown in Table 3.6-6, the Project's total annual operational energy consumption would be approximately 109,771 MMBtu, which is less than 0.002 percent of statewide energy use in 2019. Project operation would not involve any features that would use fuel or electricity in excess of energy use typical for a mining project. The Project has several features that would serve to minimize overall fossil-fueled energy use, such as the electric-powered conveyor belts, which would minimize internal haul truck trips that use diesel fuel, and conducting operations primarily during daylight hours when the availability of energy from renewable and carbon-free sources from the electrical grid (such as solar power) is at its peak. In addition, all equipment and vehicles would be industry-standard, designed to comply with all applicable energy and fuel efficiency standards, and SCVE would provide nearly 100 percent carbon-free electricity to the Project.

Because the energy use during Project operation and reclamation would not constitute a wasteful, inefficient, or unnecessary use of energy, and the Project incorporates renewable energy measures because it relies on nearly 100% renewable energy, this impact would be **less than significant**.

Mitigation: None required.

Significance: Less than significant

Impact 3.6-2: Construction, operation and maintenance, and reclamation of the Project could conflict with or obstruct a state or local plan for renewable energy or energy efficiency. (Less than Significant)

This impact discussion corresponds to Significance Criterion (b).

Construction, Operation, and Reclamation

The Project would be required to comply with current Title 24 standards and the CalGreen code, which would promote energy efficiency. Provisions in Title 24 include consideration and possible incorporation of new energy efficiency technologies and methods for building features such as space conditioning, water heating, and lighting, as well as construction waste diversion goals. The Project would also be consistent with Energy Conservation Policies established in the General Plan, as it would comply with the Title 24 standards and the CalGreen code, and would include construction of a new rail spur to use an existing rail line to transport material and a conveyor belt to transport sand and gravel from the quarry pits to the processing plant as alternatives to diesel-fueled truck transport during quarry operations.

Electricity would be the source of power for the aggregate processing plant, office/scale house, and other facilities. The Project would procure energy from SVCE, which offers nearly 100 percent carbon-free electricity. Thus, the Project would not in any way impede implementation of the State's RPS goals, which as required by SB 350, compels utility providers to incrementally increase renewable energy supplies to 44 percent by 2024, 52 percent by 2027, and 50 percent to 60 percent by 2030. In fact, electricity that would be obtained for the Project would already be consistent with SB 100, which will require 100 percent of all electricity from renewable and zero-carbon energy resources by 2045. Additionally, most of the electricity consumed by Project operations and maintenance would occur during daylight hours and the level of activity at the quarry would be highest during the active mining season (between April and October), when the availability of energy from renewable and carbon-free sources from the electrical grid (such as solar power) is at its peak (EERE 2017).

In terms of mobile energy usage, as described above, light-duty vehicles would comply with the latest federal and state standards that promote energy efficiency (USEPA 2012). Similar fuel efficiency standards for medium- and heavy-duty engines and vehicles have been adopted resulting in lower fuel consumption over time (USEPA 2016). Vehicles used for Project construction, operation, and reclamation workers to travel to and from the Project site would already incorporate these standards; therefore, the Project would not impede the efficient use of transportation fuels. Additionally, the Project would include construction of a rail spur in order to use an existing rail line and an electric-powered conveyor belt that would minimize vehicle trips.

Since the Project would comply with fuel and energy efficiency regulations and includes components that would reduce truck trips and associated consumption of transportation fuels, it would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency, and impacts would be **less than significant.**

Mitigation: None required.

Significance: Less than significant

3.6.4.4 Cumulative Analysis

The geographic context for potential cumulative impacts related to electricity is Countywide and for equipment and transportation fuel use is within the Project's truck travel radius (assumed to be approximately 40 miles), since these are the areas within which energy resources would be supplied for the Project.

Impact 3.6-3: The Project could contribute to significant cumulative increases in energy use. (Less than Significant)

Cumulative projects identified in Table 3.1-1 would also require electricity and fuel use. Given the relatively small percentage of the Project's fuel and energy use compared to existing fuel and energy use in the region, the Project's less-than-significant incremental impacts related to the use of fuel or energy in a wasteful or inefficient manner would not combine with the incremental impacts of other projects to cause a significant cumulative impact.

Regarding electricity, there is no existing significant adverse condition that would be worsened or intensified by the Project. As discussed previously, most of the electricity consumed by Project operations and maintenance would occur during daylight hours and the level of activity at the quarry would be highest during the active mining season (between April and October), when the availability of energy from renewable and carbon-free sources from the electrical grid (such as solar power) is at its peak (EERE 2017).

Similarly, regarding the efficiency of fuel use, there is no existing significant adverse condition (such as a shortage) that would be worsened or intensified by the Project. In the event of a future shortage, higher prices at the pump would curtail unnecessary trips that could be termed "wasteful" and would moderate choices regarding vehicles, equipment, and fuel efficiency.

Since the Project would not conflict with a state or local plan for renewable energy or energy efficiency, there would be no cumulative impact related to conflicts withs such plans.

For the above reasons, the cumulative energy impact would not be significant, and the Project contribution to cumulative energy impacts would not be considerable, and therefore **less than significant**.

Mitigation: None required.

Significance: Less than significant

3.6.5 References

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3.7 Geology, Soils, and Paleontological Resources

3.7.1 Introduction

This section describes the existing geologic and seismic setting and evaluates the potential for facility construction, quarry operation, and reclamation activities to result in adverse impacts associated with surface and subsurface geologic materials, seismic ground shaking, slope stability, soil conditions, and paleontological resources. The analysis is based in part on the review of a geotechnical slope stability investigation (Sierra Geotechnical Services, Inc. [SGS] 2016) and a geotechnical peer review (Golder Associates 2017a, 2017b), all of which are provided as Appendix G.1, and a paleontological technical report (PaleoSolutions), provided as Appendix G.2, prepared specifically for the Project. In addition, the analysis was supported by publicly available reports and maps published by the U.S. Geological Survey (USGS), California Geological Survey (CGS), and County of Santa Clara (County).

Impacts associated with expansive soils, lateral spreading, subsidence, and soil collapse are not included in this analysis. Refer to Section 3.7.4.2, *Significance Criteria*, below, and to Section 3.1, *Introduction to Environmental Analysis* for additional information. Impacts to groundwater resources are not evaluated in this section, but rather are analyzed in Section 3.10, *Hydrology and Water Quality.*

3.7.2 Regulatory Setting

3.7.2.1 Federal

Mine Safety and Health Administration

The Mine Safety and Health Administration (MSHA), a division of the U.S. Department of Labor, administers the provisions of the Federal Mine Safety and Health Act of 1977. MSHA develops and enforces mandatory safety and health regulations pursuant to the Code of Federal Regulations (CFR) that apply to all surface and underground mines located in the U.S. through inspections, rigorous training, and providing educational programs for employers and employees in the mining industry. The ultimate purpose is to eliminate fatal accidents, reduce the frequency and severity of nonfatal accidents, minimize health hazards, and promote improved safety and health conditions in mines of the United States. Project operation would be regulated by MSHA, and periodic inspections would be performed under MSHA regulations to ensure maximum worker safety. Mining operations are subject to periodic safety inspections by MSHA.

3.7.2.2 State

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) and its implementing regulations (14 Cal. Code Regs. Section 3500 et seq.) address geotechnical slope stability for both fill slopes and cut slopes. SMARA does not specify a minimum Factors of Safety (FOS) required for slope stability. However, Section 3704(f) of the regulations requires that: “Cut slopes, including final highwalls and quarry faces, shall have a minimum slope stability FOS that is suitable for the proposed end use and conform with the surrounding topography and/or approved end use." For fill slopes, Section 3704(d) states that "fill slopes shall be 2:1 Horizontal to Vertical (H:V) or flatter. Slopes steeper than 2:1 H:V must be supported by site specific geologic and engineering analyses to indicate that the minimum FOS is suitable for the proposed end use." More generally, Section 3704(e) states that at closure, all fill slopes, including permanent piles or dumps of mine waste and overburden, shall conform with the surrounding topography and/or approved end use. For the Project, the proposed end use is cattle grazing.

Alquist-Priolo Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (Public Resources Code Section 2621 et seq.) addresses the hazards posed by surface faulting to structures for human occupancy. The primary purpose of the Alquist-Priolo Act is to prevent the construction of buildings intended for human occupancy on the surface traces of active faults. The Alquist-Priolo Act also is intended to provide the citizens with increased safety and to minimize the loss of life during and immediately following earthquakes by facilitating seismic retrofitting to strengthen buildings against ground shaking.

The Alquist-Priolo Act requires the State Geologist to establish and regularly review and update regulatory "earthquake fault zones" around the surface traces of active faults and to issue appropriate maps sufficiently defining potential surface rupture or fault creep to assist cities and counties in planning, zoning, and building regulation functions. Local agencies must enforce the Alquist-Priolo Act in the development permit process, where applicable, and may enact regulations that are more restrictive than State law requirements. Projects within an earthquake fault zone can be permitted, but only after cities and counties have required a geologic investigation prepared by a licensed geologist to demonstrate that buildings will not be constructed across active faults. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be "set back." Although setback distances may vary, a minimum 50-foot setback is generally required.

The Sargent Fault, which extends just north of Tar Creek along the north side of the Project site, is zoned within an Alquist-Priolo Act fault zone; however, no elements of the Project are within the required Alquist-Priolo fault zone setbacks. The smaller fault (discussed below and termed a "splay fault" in this section) that appears to be a splinter of the Sargent fault extending through the mid-portion of the Project site, is not zoned under the Alquist-Priolo Act but is considered a Geologic Hazard Zone (GHZ) by the County (see additional discussion in Section 3.7.3.1).

Seismic Hazards Mapping Act

The State of California passed the Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699) to address the effects of strong ground shaking, liquefaction, landslides, and other ground failures due to seismic events. Under the Seismic Hazards Mapping Act, the State Geologist is required to delineate "seismic hazard zones." Cities and counties must regulate certain development projects within these zones until the geologic and soil conditions of their project sites have been investigated and appropriate mitigation measures, if any, have been incorporated into development plans. Under Public Resources Code Section 2697, cities and counties must require, prior to the approval of a project located in a seismic hazard zone, submission of a Preliminary Geotechnical Report defining and delineating any seismic hazard. Each city or county must submit one copy of each Preliminary Geotechnical Report, including mitigation measures, to the State Geologist within 30 days of its approval.

State publications supporting the requirements of the Seismic Hazards Mapping Act include the CGS SP 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, discussed above, and SP 118, *Recommended Criteria for Delineating Seismic Hazard Zones in California* (2004). SP 117A provides guidelines to assist in the evaluation and mitigation of earthquake-related hazards for projects within designated zones requiring investigations and to promote uniform and effective Statewide implementation of the evaluation and mitigation elements of the Seismic Hazards Mapping Act. SP 118 provides recommendations to assist the CGS in carrying out the requirements of the Seismic Hazards Mapping Act to produce the Probabilistic Seismic Hazard Maps for the State. If and when the CGS evaluates the 7.5-minute geologic quadrangle containing the Project site (Chittenden Quadrangle) under the Seismic Hazard Mapping Act, the Project site and surrounding areas would be designated a landslide hazard zone based on the large number of existing landslides.

California Building Code

The California Building Code (CBC), Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress facilities, and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California (California Department of General Services [DGS] 2020).

The 2019 edition of the CBC took effect starting January 1, 2020. The 2019 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, *Minimum Design Loads for Buildings and Other Structures*, provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (such as wind loads) for inclusion into building codes. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute a guarantee that substantial structural damage would not occur in the event of a maximum magnitude earthquake. However, a structure designed in-accordance with the seismic requirements of the CBC should not collapse in a major earthquake (DGS 2020).

3.7.2.3 Local

Santa Clara Geologic Ordinance

The County's policies and standards pertaining to geologic hazards and associated investigation and mitigation standards are contained in Title C, Division C12, Chapter IV of the County of Santa Clara Ordinance Code. The geologic ordinance establishes minimum requirements for the geologic evaluation of land based on proposed land uses. It further establishes procedures to enforce these requirements, including rules and regulations for the development of land which is on or adjacent to known potentially hazardous areas, or which has the potential to create or increase the risk of geologic hazard. The provisions of the ordinance are also intended to ensure that the County fulfills its duties under state law regarding geologic hazards, including the Alquist-Priolo Act (surface fault rupture) and the Seismic Hazards Mapping Act (earthquake-induced landslides and liquefaction ground failure). The County Planning Office and/or the County Geologist reviews land development applications, building permit applications and land use proposals using maps showing the official County GHZs, other maps and pertinent data, including, but not limited to previous investigations of the subject property, to determine if a geologic investigation is required. In addition, the ordinance sets forth minimum standards for the investigation and remediation of hazardous geologic conditions and approval of geologic reports by the County Geologist.

While the Project site has not been evaluated by the CGS for landslides or liquefaction under the Seismic Hazard Mapping Act, nearly the entire Project site is zoned as a landslide GHZ and the mid-portion of the Project site is zoned as a fault rupture GHZ. As a result, the Project site must comply with reporting, enforcement, and mitigation requirements set forth by the County's requirements for investigation and mitigation standards contained in Title C, Division C12, Chapter IV of the County of Santa Clara Ordinance Code.

County of Santa Clara Surface Mining and Reclamation Ordinance

The County of Santa Clara Surface Mining and Reclamation Ordinance (Sections 2.10.040 and 4.10.370 of the County Zoning Ordinance) was adopted to comply with and implement the provisions of SMARA by adopting procedures for reviewing, approving, and/or permitting surface mining operation, reclamation plans, and financial assurances in the unincorporated areas of the county. The ordinance sets forth the general procedural, operational, and reclamation requirements that must be complied with, where applicable, by surface mining and production operations in the county. The Ordinance contains requirements for the content of a reclamation plan, the review procedure and mining standards.

The following lists applicable standards on setbacks and final slope gradients contained in the ordinance that would apply to the Project:

- **Cut slope setbacks:** Cut slopes shall be no closer than 25 feet distant from any adjoining property line, except where adjoining property is being mined; nor 50 feet to any right-of way of any public street, or official plan line or future width line of a public road.

- **Ridgeline setbacks:** When surface mining occurs in a canyon area which abuts an urban area or the ridgeline is visible from the valley floor, the top of the uppermost cut area shall be as shown in an approved reclamation plan, or in the absence of an approved plan, not less than 50 feet from the top of the ridge existing prior to excavation.
- **Final Slope Gradient:** The designed steepness and proposed treatment of the mined lands' final slopes shall take into consideration the physical properties of the slope material, landscaping requirements, and other factors. The maximum stable slope angle might range from 90 degrees in a sound limestone, igneous rock, or similar hard rock to less than 20 degrees in highly expansive clay. In all cases, reclamation plans shall specify slope angle flatter than the critical gradient for the type of material involved.
  - Dangerous contours shall be eliminated from the land surface of the excavated area.
  - 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 will be necessary when public safety or adjoining property may be affected.
  - The Planning Commission, at the time of approval or modification of the plan, may, based on the maximum stable slope angle of the material involved, specify the slope of the reclaimed land surface, may require grading or back-filling, and may require the elimination of unnatural steps or benches where necessary to carry out the reclamation plan.
- **Erosion and Drainage:** Grading and revegetation shall be designed to both prevent excessive erosion and to convey surface runoff to natural drainage courses or interior basins designed for water storage. Lakes, ponds, streams, or other bodies of water may be created within an excavation only when created in accordance with the reclamation plan approved by the Commission after considering the recommendations of the County Health Department, Santa Clara Valley Water District and other affected agencies. Final surfaces shall be treated to prevent erosion unless otherwise specifically permitted by the Planning Commission.

On-Site Wastewater Treatment Systems (Septic Systems) Ordinance

Division B11, Chapter IV, of the County Ordinance Code establishes regulations for the approval, installation, and operation of on-site wastewater treatment systems (OWTS) within unincorporated Santa Clara County, consistent with the Central Coast Regional Water Quality Control Board (RWQCB) standards and water quality plans. Division B11, Chapter IV was adopted to prevent the creation of health hazards and nuisance conditions and to protect surface and groundwater quality. The accompanying Onsite Systems Manual to Division B11 provides policies, procedures, and technical details related to permitting, design, construction, and operation of on-site septic systems. Requirements for soil percolation, groundwater separation, ground slope, and setbacks are specified.

Prior to installation of an OWTS, a permit must be obtained from the County Department of Environmental Health (DEH). Permits will only be issued in areas of the County where a sanitary sewer is not available. OWTS cannot be used if soil conditions, topography, high groundwater, or other factors indicate this method of sewage disposal is unsuitable. OWTS are not allowed within 100 feet of a water well, 50 feet of a drainage swale, or on soils where a high-water table extends close to the land surface.

Section B11-60 of the County Ordinance Code applies to OWTS with design wastewater flows of up to 10,000 gallons per day (gpd). Additionally, an operating permit and regular inspections are required for OWTS treating flows greater than 2,500 gpd. Alternative septic systems of any size (necessary if certain setbacks cannot be maintained, such as separation to high seasonal groundwater or steep slopes) can also require the issuance of a renewable operating permit, depending on the nature of the alternative treatment methods (DEH 2018).

Section B11-86 of the County Ordinance Code addresses abandonment of OWTS and requisite DEH permitting. Abandoned OWTS must have their sewage removed and disposed of in a County-approved manner. The tank top and bottom must be crushed and backfilled. Abandonment requires issuance of a septic tank abandonment permit from the DEH.

Santa Clara County General Plan

Section SC of the Safety and Noise Element of the Santa Clara County General Plan (County of Santa Clara, 1994) addresses natural hazards. This element includes several geology and seismic policies that pertain to this Project:

> ***Policy R-HS 16:*** No new building site shall be approved on a hazardous fault trace, active landslide, or other geologic or seismic hazard area that poses a significant risk.
>
> ***Policy R-HS 19:*** In areas of high potential for activation of landslides, there shall be no avoidable alteration of the land or hydrology which is likely to increase the hazard potential, including:
>
> a. saturation due to drainage or septic systems;
>
> b. removal of vegetative cover; and
>
> c. steepening of slopes or undercutting the base of a slope.
>
> ***Policy R-HS 21:*** Proposals involving potential geologic or seismic hazards shall be referred to the County Geologist for review and recommendations.

In addition, Part 5, South County Joint Area Plan contains the following policy regarding geologic hazards in the rural county:

> ***Policy SC 15.1:*** Geotechnical investigations should be required on all projects in unstable areas, including areas of expansive soils, prior to construction to insure that the potential hazards are identified and can be properly mitigated. A contract should be negotiated: with the State Department of Mines and Geology for completion of a study of the Santa Cruz Mountains from the southern county border to the New Almaden area (approximate cost: $l0,000 per year for 3 years), and between the Cities and a consulting geologist for the review of development projects in potentially hazardous areas would be covered by a fee to developers).

The County General Plan (1994) also recognizes paleontological sites as having scientific value and the potential to increase knowledge of the natural world and includes a goal (Goal 5.1) to protect and preserve paleontological resources. Policies C-RC 49 and R-RC 81 state that heritage resources, which include paleontological resources, within Santa Clara County and within rural unincorporated areas should be preserved. Policies C-RC 50 and R-RC 82 provide a Countywide general approach to heritage resource protection, which involves: (1) Inventory and evaluation of heritage resources, (2) Prevention or minimization of adverse impacts on heritage resources, and (3) restoration, enhancement, and commemoration of resources as appropriate. Additional policies and recommendations set the guidance by which the general approach is to be implemented. The following policies are relevant to the evaluation of the paleontological resources impacts of the Project:

> ***Policy R-RC 85:*** No heritage resource shall knowingly be allowed to be destroyed or lost through a discretionary action (zoning, subdivision site approval, grading permit, building permit, etc.) of the County of Santa Clara unless:
>
> a. The site or resource has been reviewed by experts and the County Historic Heritage Commission and has been found to be of insignificant value; or
>
> b. There is an overriding public benefit from the project and compensating mitigation to offset the loss is made part of the project.
>
> ***Policy R-RC 86:*** Projects in areas found to have heritage resources shall be conditioned and designed to avoid loss or degradation of the resources. Where conflict with the resource is unavoidable, mitigation measures that offset the impact may be imposed.
>
> ***Policy R-RC 88:*** For projects receiving environmental assessment, expert opinions and field reconnaissance may be required if needed at the applicant's expense to determine the presence, extent, and condition of suspected heritage resources and the likely impact of the project upon the resources.
>
> ***Policy R-RC 92:*** The participation of concerned citizens and professionals dealing with heritage resources in the identification of sites and the review and conditioning of projects by its boards and commissions shall be encouraged by the County.

The Society for Vertebrate Paleontology (SVP) has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most California State regulatory agencies, including the County, accept the SVP standard guidelines as a measure of professional practice.

3.7.3 Environmental Setting

3.7.3.1 Geology, Soils, and Seismicity

Regional Geologic Setting

The Project site is in the central Coast Ranges Geomorphic Province,[1] which is characterized by northwest-trending 2,000- to 4,000-foot-high mountain ranges and intervening valleys. The ranges and valleys trend northwest, subparallel to the San Andreas Fault. The Coast Ranges are composed of thick Mesozoic and Cenozoic-aged (225 million years ago to present) sedimentary strata. The northern and southern ranges are separated by a depression containing the San

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1 A geomorphic province is a region of unique topography and geology that is readily distinguished from other regions based on its landforms and diastrophic history (Paleo Solutions 2017).

Francisco Bay (CGS 2002). The Santa Cruz Mountains, which is a range within the province, extends from San Francisco to Hollister in the southern end of the Santa Clara Valley. The Project site is on the eastern slopes of the Sargent Hills situated in the low-lying foothills at the southern end of the Santa Cruz Mountains.

Project Site Topography and Geology

Topography

Project site topography consists of gently rolling to moderately steep hillsides with moderate to well-incised drainages. Relief at the Project site ranges from approximately 800 feet above mean sea level (msl) along the higher ridge crests to less than 150 feet msl along the eastern portions of site. Average overall slope angles are approximately 15 degrees in the proposed development areas. The site is bisected by the south-flowing Sargent Creek (SGS 2016).

Naming Conventions for Geologic Units

The Project site geology, specifically the rock types and their structure, has been the subject of several geologic investigations over the past several decades. Since 1958, six geologic maps have been produced for the area surrounding Sargent and all maps included the Project site. See Jennings and Strand 1958; Dibble and Brabb 1978; Graymer 1979; Wagner, Greene and Saucedo, and Pridmore 2002; and Dibblee Minch (ed.) 2006. The geologic interpretations and the maps that resulted from these investigations all differ slightly. This can be expected because as more information is obtained through each subsequent investigation, rock types and their origins are clarified and correlations between the units are refined.

The most obvious differences in the geologic maps produced during the five previous field investigations are the interpretations comprising the Etchegoin Formation. Previous investigations (Dibblee and Brabb 1978; Graymer 1979; Wagner et al. 2002) mapped the rocks in the north part of the Project site (south of Tar Creek) and those at the southern end (near mining Phases 3 and 4) as distinct units of non-marine sandstone and mapped the remainder of the Project site as marine sandstone (Etchegoin Formation). Works by Jennings and Strand (1958) and Dibblee and Minch (2006) identify the entire Project site as underlain by marine deposits; Dibblee and Minch (2006) refer to these units as belonging to the Etchegoin Formation. This distinction is important because the slope stability analysis completed by SGS (2016) described Project site geology using nomenclature put forth by Graymer (1979), while the paleontology study, prepared by PaleoSolutions, Inc. (2017), relied on the geology nomenclature used by the more recent Dibblee and Minch (2006) compilation. Therefore, the naming convention used by SGS to describe Project site marine deposits (Tscm) can be considered equivalent to the Etchegoin Formation (Te) applied in the paleontology study. The identifier for non-marine deposits (Tscn), used by SGS, is equivalent to the identifier for unnamed non-marine deposits (Tn) used by PaleoSolutions, Inc. In this geologic impact analysis, the identifiers (Tscm)/(Tscn) and (Te)/(Tn), respectively, are used interchangeably. The unit identifiers are different names for units with similar characteristics, so the differences do not affect the analysis of the Project's impacts.

Site Geologic Conditions

As shown in **Figure 3.7-1**, most of the Project site is underlain by Pliocene-aged marine sandstone and claystone of the Etchegoin Formation (Te) with a smaller portion in the southern area underlain by an unnamed non-marine claystone (Tn) (Dibblee and Minch 2006). The sediments making up these rocks were deposited in shallow marine, marginal marine, and non-marine environments and contain inter-bedded pebble and cobble conglomerates;[2] coarse- to fine-grained sandstones, brown siltstone, and silty claystones (SGS 2016).[3] Marine (Te) and non-marine (Tn) deposits can be differentiated based on the presence of fossils. Marine fossils were observed west of Sargent Creek, predominantly along the upper benches/knobs (SGS 2016).

SGS conducted a subsurface investigation as part of its slope stability analysis, which included drilling soil borings and excavating test pits. The field investigation consisted of 11 soil borings advanced to depth between 47 and 100 feet and 43 test pits, each to a depth of about 7 feet. SGS identified marine and non-marine deposits as non-marine quartz sandstone (Tscn) and marine pebble and quartz conglomerate (Tscm). The non-marine deposits consist of fine to coarse sands, silts, and clay mixtures with some rounded gravels and cobbles up to 8 inches in diameter. These deposits were massive,[4] cross bedded,[5] and interbedded.[6] Individual rocks (i.e., clasts) varied from granitic and coarse-grained, hard dark sandstone (graywacke), predominantly in the southern and central portions of the site. SGS also reported that the marine deposits (Tscm) were observed and mapped during its investigation but were not encountered in test pits or exploratory borings during the subsurface investigation. The Tscn and Tscm units are oriented (strike) toward the northeast with an incline (dip) of about 30 to 45 degrees to the southeast. (SGS 2016)

The materials encountered during this subsurface investigation are consistent with the materials encountered during the exploratory drilling conducted by Graniterock Exploration Services in 2007, which advanced three deep soils borings to depths of 150, 250, and 360 feet. (SGS 2017) Alluvial[7] deposits (Qpaf by Graymer 1997 and Qa by Dibblee and Minch 2006) are present at the Project site in the northern portion near Tar Creek, along Sargent Creek and its tributary drainages, and along the Pajaro River. These deposits comprise mixtures of cobbles, gravels, sand, silts, and clays and range from a few inches thick in the upper reaches of the watershed areas, where erosion has cut the channels, to multiple feet thick where the channels widen and deepen as they approach the flatter terrain of the Pajaro River Valley (SGS 2016). Older alluvium, denoted by Dibblee as Qoa, was mapped in limited areas in the southern extremities of the Project site.

2 A conglomerate is a sedimentary rock made up of many smaller rocks within a cemented matrix.

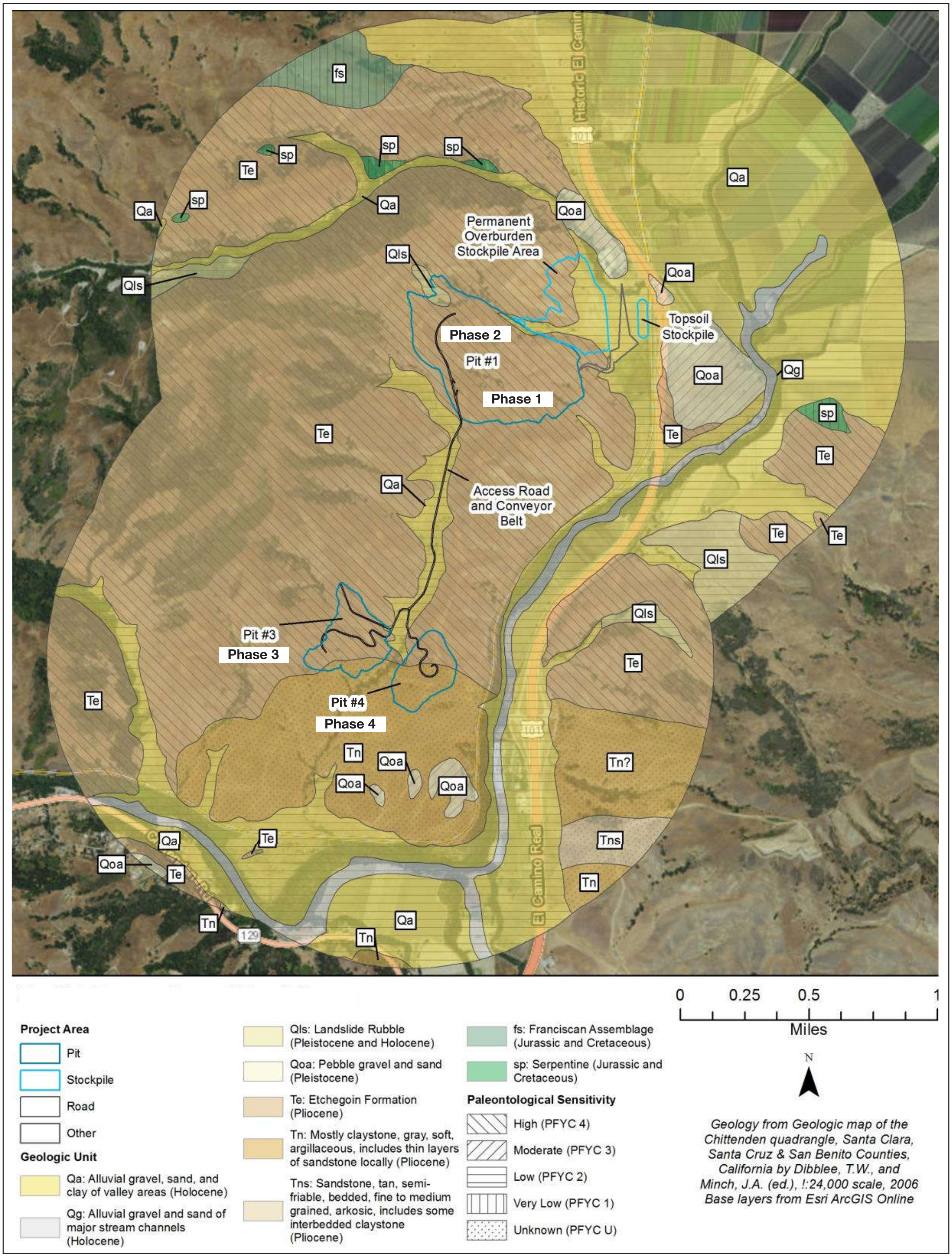
3 Marine depositional environments are those where deposition of sediments occur through water (e.g., shallow inland sea). Coastal deposition is an example of marginal marine and non-marine environments are those where sediments are deposited on land through landslides, erosion and sedimentation.

4 The term "massive" as a geological description of rock mechanics, refers to a durable rock or deposit that is said to be isotropic (same in all directions) homogeneous and is free of fissures, bedding, foliation or other discontinuities. Strength does not vary appreciably from point to point (Jackson 1997).

5 Stratigraphic bedding that is inclined at an angle to the main plane (Ibid.)

6 Sedimentary beds lying between or alternating with others of different character (Ibid.).

7 Alluvial deposits are made up of eroded rock and soil materials that are deposited by water (fluvial processes).



SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

SOURCE: Paleo Solutions, 2017

SCC Sargent Quarry

Figure 3.7-1
Project Geology Map

ESA

Surficial deposits at the Project site include topsoil/colluvium and landslide deposits. Landslide deposits are identified as Qls by Dibblee and Minch (2006). Unconsolidated topsoil/colluvial materials are located outside of the drainages along the slope faces and atop the ridges. In general, these deposits consist of brown, fine to coarse sand containing gravel and cobbles at an approximate thickness of 3 feet. Laboratory testing determined that the topsoil/colluvial materials exhibit weak shear strengths and could be unstable on steepened slopes (SGS 2016).

Soils

Nine soil-mapping units have been identified on the Project site. Each unit is described in greater detail in **Table 3.7-1**. None of the soils of the site are considered hydric[8] soils, i.e., soils that under appropriate hydrological conditions may support wetlands. All the soil types are considered well-drained and moderately to highly erodible.

TABLE 3.7-1
SOIL TYPES AT PROJECT SITE

Soil Series and Types	Map Unit Symbol	Parent Material	Drainage Class	Percent Hydric Composition
Zamora Series				
Zamora clay loam, 2-9% slopes	ZbC	Alluvium	Well-drained	0
Azule Series				
Azule clay loam, 15-30% slopes, eroded	AuE2	Alluvium	Well-drained	0
Azule clay loam, 15-30% slopes	AuE	Alluvium	Well-drained	0
Azule clay loam, 9-15% slopes, eroded	AuD2	Alluvium	Well drained	0
Azule clay loam, 30-75% slopes	AuG	Alluvium	Well-drained	0
Los Osos Series				
Los Osos clay loam, 15-30% slopes	LoE	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 30-50% slopes	LoF	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 50-75% slopes	LoG	Residuum weathered from sandstone and shale	Well-drained	0
Diablo Series				
Diablo clay, 9-15% slopes	DaD	Residuum weathered from sandstone	Well-drained	0
SOURCES: USDA NRCS 2020; Freeman Associates 2022.				

8 Hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

Trace Metals

Rock and soil often contain naturally occurring trace metals that could become hazardous to human health. Exposure to these trace metals can occur through the inhalation of fugitive dust emitted during excavation and processing of minerals. These trace metals also could be released into the surface water and groundwater. Cadmium and selenium are two common hazardous metals that could be encountered during quarry operation. Cadmium concentrations are highest in shale formations and selenium concentrations are highest in Cretaceous Period marine limestone deposits. However, given the Pliocene age of the underlying geology at the Project site, and the abundance of Holocene age alluvium, colluvium, and landslide deposits, there is a low probability of either metal occurring in high concentrations (Freeman Associates 2022).

Slope Stability

Landslides are prevalent at the Project site and in the near-vicinity due to the character of the geologic materials and the seismic setting (see below). Most of the Project site is zoned by the County as a GHZ for landslides (see Section 3.7.2.2, above). Several surficial to moderately deep-seated (backscarps of up to 40 feet in height) landslides were mapped in multiple areas across the Project site, as shown in Figure 3 in Appendix G.1 to this Draft EIR (SGS 2016). These landslides appear to be relatively recent and are identified based on geomorphic[9] features such as eroded scarps and irregular topography. Most of the slides appear to be surficial translational[10] and to originate at the contact with the topsoil/ colluvial units and the underlying tertiary deposits (Etchegoin Formation), adjacent to slopes of incised drainages. In a few areas, however, the existing landslides extend below the surficial deposits into the underlying bedrock. Closer examination of the back scarps[11] revealed that the slides appeared to originate along fault planes and fractures in the underlying deposits (SGS 2016). The possibility also exists that the failure planes may have occurred along the interbedded silts and clays which occur at depth throughout the site. Some of the deeper slides noted near the proposed Phases 1, 2, and 3 appear to follow the direction of bedding in these areas and are rotational[12] in nature (SGS 2016).

The presence of landslides and conditions (slope gradient and underlying materials) that could lead to future landslides could affect the slope angles proposed for the quarry excavations. While the vast majorities of slides are shallow/surficial and would be removed during excavation, some basal[13] surfaces were observed to be deep seated and may daylight onto cut-slope faces. In addition, landslide debris above top-of-slope cuts may be encountered and the slides re-activated by the excavations proposed under the mining plan (SGS 2016).

9 Pertaining to landforms and features.

10 Translational slides are those that involve downslope displacement of rock or soil on a surface that is roughly parallel to the general ground surface (Jackson 1997).

11 A back scarp is the slope face behind the failed section of a landslide.

12 Rotational slides take place on a well-defined, curved shear surface (concave upward) producing a backward rotation in the displaced mass (Ibid.).

13 Basal refers to bedrock surfaces that form or belong to a bottom layer or base.

Seismic Setting

The Project site area is in a seismically active region, situated between the San Andreas fault approximately 2 miles to the south, and the Sargent fault, which runs through the northern portion of the site (Freeman Associates 2022). The Sargent Fault Zone extends through the northern portion of Project site just north of Tar Creek. The Sargent fault is considered a “right-lateral reverse-oblique fault,” which means that its movement is a combination of right lateral (horizontal) and vertical thrust with the southwest side moving upward. The Sargent fault is considered a Holocene fault, meaning that there is evidence to suggest that this fault has experienced displacement within the last 11,700 years (CGS 2010). The Sargent fault thrust system is associated with the San Andreas Fault Zone as it breaks off from the San Andreas south of Los Gatos, runs southeast through the Santa Cruz Mountains, crosses the Pajaro River floodplain, and extends near the northeastern front of the Lomerias Muertas and Flint Hills (Freeman Associates 2022). Recent geologic mapping (Graymer 1997, Dibblee and Minch 2006) identified a shorter and older (displacement within the last 1.6 million years) fault trace associated with the main trace of the Sargent fault south of Tar Creek extending through what would become the quarry pits of Phases 1 and 2 (**Figure 3.7-2**). This fault is henceforth referred to as the Sargent “splay” fault.[14]

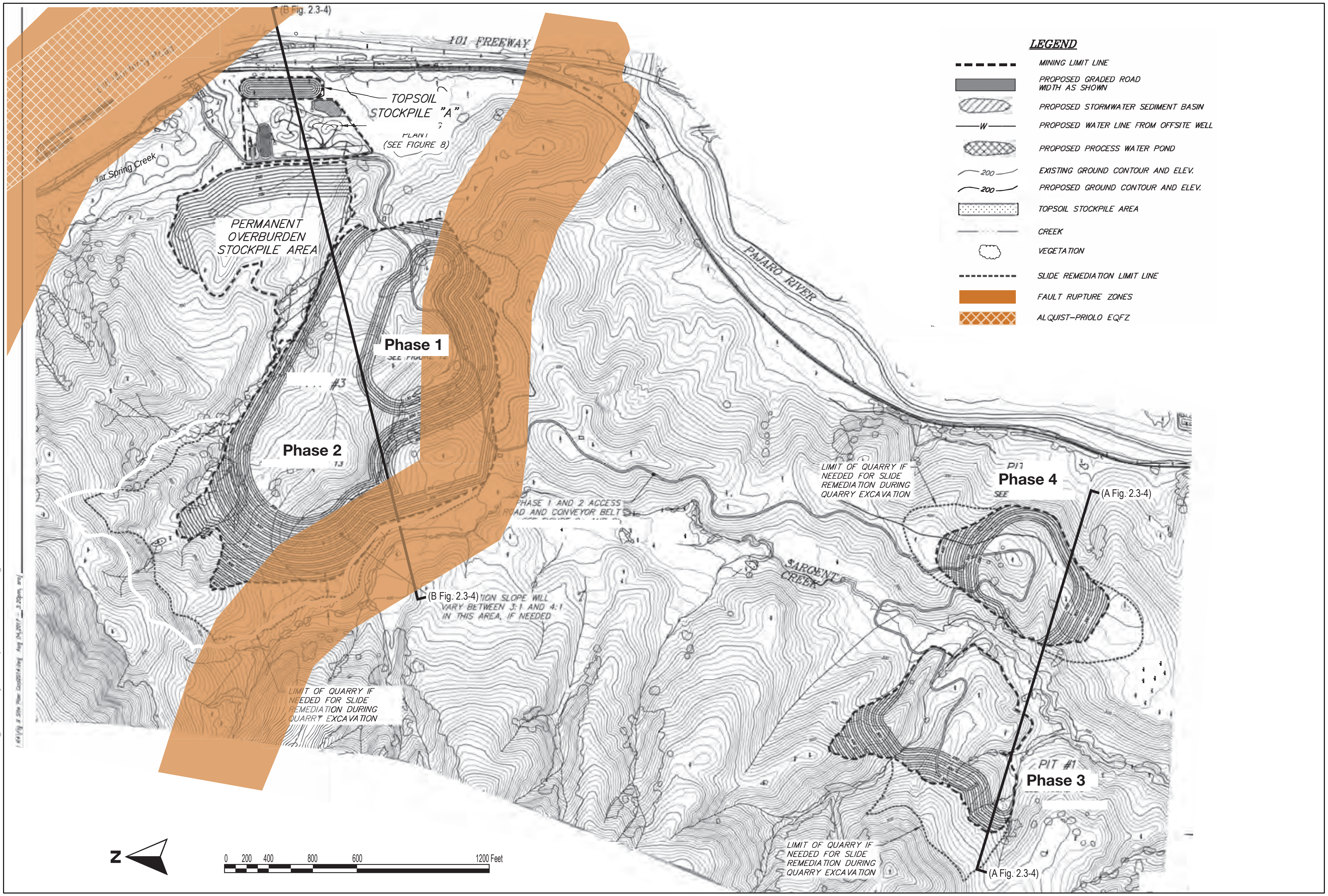
The 684-mile San Andreas Fault Zone is the principal element of the San Andreas fault system, a network of faults with predominantly right lateral strike-slip displacement that collectively accommodates most of the relative north-south motion between the North American and Pacific plates (Freeman Associates 2022). Near the Project site, the Santa Cruz Mountains section of the San Andreas fault extends from Black Mountain in the northern Santa Cruz Mountains and runs southeast to just south of San Juan Bautista. The San Andreas Fault Zone and has several instances of historic (last 200 years) displacement.

The Sargent and the San Andreas fault zones are both delineated as Alquist-Priolo Act Earthquake Hazards Zones. The County has delineated the traces of the Sargent fault on the Project site as a Santa Clara County Fault Rupture Hazard Zone. These faults have the potential for generating strong ground motions and surface rupture at the Project site (Freeman Associates 2022).

3.7.3.2 Paleontological Setting

Paleontological resources are the fossilized remains of plants and animals: vertebrates (animals with backbones, such as mammals, birds, and fish), invertebrates (animals without backbones, such as starfish, clams, and coral), and microscopic plants and animals (microfossils). Paleontological resources can include mineralized body parts, body impressions, or footprints and burrows. They are valuable, non-renewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived.

[14] The term “splay” is used here to describe the fault lineation extending through the Phase 1 mining area. A splay is a minor fault branching off of a larger fault.



SOURCE: County of Santa Clara, 2021.

SCC Sargent Quarry

Figure 3.7-2
Fault Rupture Zones

ESA

SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

Fossils can be used to determine the relative ages of the depositional layers in which they occur and of the geologic events that created those deposits. The age, abundance, and distribution of fossils depend on the geologic formation in which they occur and the topography of the area in which they are exposed. The geologic environments within which plants or animals became fossilized usually were quite different from the present environments in which the geologic formations exist.

One system commonly used to determine paleontological sensitivity is the Potential Fossil Yield Classification (PFYC) system developed by the Bureau of Land Management (BLM) (BLM 2016). The PFYC system predicts sensitivity based on two facts of paleontology: occurrences of paleontological resources are closely tied to the geologic units that contain them, and the presence of fossils can be estimated based on the distribution of geologic units near the ground surface. The PFYC system classifies the potential to find paleontological resources in a specific geologic unit on a scale of one to five, with five being the highest potential. The PFYC system classifications are:

- **1 = Very Low Potential**: Geologic units are not likely to contain recognizable paleontological resources. Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units. Units are Precambrian in age. Management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances.
- **2 = Low Potential**: Geologic units are not likely to contain paleontological resources. Field surveys have verified that significant paleontological resources are not present or are very rare. Units are generally younger than 10,000 years before present. Recent aeolian deposits. Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely. Management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances.
- **3 = Moderate Potential**: Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence. Marine in origin with sporadic known occurrences of paleontological resources. Paleontological resources may occur intermittently, but these occurrences are widely scattered. The potential for authorized land use to impact a significant paleontological resource is known to be low to moderate. Management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Opportunities may exist for hobby collecting. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources.
- **4 = High Potential**: Geologic units that are known to contain a high occurrence of paleontological resources. Significant paleontological resources have been documented but may vary in occurrence and predictability. Surface-disturbing activities may adversely affect paleontological resources. Rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present. Illegal collecting activities may impact some areas. Management concern is moderate to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot-checking may be necessary during land-disturbing activities. Avoidance of known paleontological resources may be necessary.
- **5 = Very High Potential**: Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources. Significant paleontological resources have been documented and occur consistently. Paleontological resources are highly susceptible to adverse impacts from surface-disturbing activities. Unit is frequently the focus

of illegal collecting activities. Management concern is high to very high. A field survey by a qualified paleontologist almost always is needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.

- **U = Unknown Potential**: Geologic units that cannot receive an informed PFYC assignment. Geological units may exhibit features or preservational conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is unknown. Geologic units represented on a map are based on lithologic character or basis of origin but have not been studied in detail. Scientific literature does not exist or does not reveal the nature of paleontological resources. Reports of paleontological resources are anecdotal or have not been verified. Area or geologic unit is poorly or under-studied. Qualified professionals have not yet been able to assess the nature of the geologic unit. Until a provisional assignment is made, geologic units with unknown potential have medium to high management concerns. Field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.

As discussed above under the heading "Naming Conventions for Geologic Units," the geologic units that were identified within the Project site and that are consistent with geologic mapping by Dibblee and Minch (2006) are classified according to the PFYC criteria, as shown in Figure 3.7-1. The Pliocene Etchegoin Formation (Te) has a high paleontological potential (4), the unnamed Pliocene claystone (Tn) has an unknown potential (U), and Pleistocene-age Quaternary older alluvium (Qoa) (if encountered subsurface) has a moderate paleontological potential (3). Holocene-age alluvial deposits (Qa) are generally less than 10,000 years old and are considered to have a low paleontological potential (2). Fossils that are discovered in landslide deposits (Qls) will lack stratigraphic context, and so these units are also considered to have a low paleontological potential (2) (Appendix G.2)

3.7.4 Impact Evaluation

3.7.4.1 Approach to the Analysis

Evaluation of environmental impacts associated with geology, soils, seismicity, and paleontology was supported by the field effort and technical reports provided by SGS, Golder Associates, and PaleoSolutions. SGS completed the slope stability analysis (See SGS 2016 in Appendix G.1),[15] which characterized the Project site geology, seismic setting, and slope stability conditions. Golder Associates reviewed the 2016 SGS Slope stability analysis and provided comment, which SGS responded to accordingly (see Golder Associates 2017a and 2017b, and SGS 2017 in Appendix G.1). The combination of SGS analysis and Golder's technical peer review provided a good technical understanding of the geologic and seismic conditions and the potential for slope instability during the proposed mining program. PaleoSolutions prepared a comprehensive paleontological assessment of the Project site, which assessed the potential for impacts to paleontological resource (Appendix G.2). Representatives of the County and members of the County's environmental consultant team who have the relevant professional credentials and

[15] When the geotechnical analyses in Appendix G were prepared, the Project phasing was different, than currently proposed but the Project footprints are unchanged. In the geotechnical analyses, Phase 1 is current Phase 3, Phase 2 is current Phase 4, Phase 3 is current Phase 1 and Phase 4 is current Phase 2.

experience have independently reviewed all Applicant-provided studies and technical reports on behalf of the County (including those cited in this section) and have found them to follow applicable protocols and appropriate for use in the EIR.

3.7.4.2 Significance Criteria

Consistent with CEQA Guidelines Appendix G, a significant impact would occur if the Project would:

a) Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving:
   i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
   ii. Strong seismic ground shaking;
   iii. Seismic-related ground failure, including liquefaction; or
   iv. 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, creating substantial direct or indirect risks to life or property;

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; or

f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Due to the nature of the Project, certain criteria, or portions of a particular criterion are not analyzed in this section for the reasons described below:

e) ***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.*** Impacts associated with lateral spreading, subsidence, and soil collapse are not analyzed further in this section. Lateral spreading is the lateral or downslope displacement of a soil or rock mass triggered by liquefaction of underlying materials. As discussed in Impact 3.7-1, the areas with potentially liquefiable soils are located along the Pajaro River south of the Project boundary and southeast of the Project boundary between the Union Pacific Railroad tracks and Betabel Road. These areas are generally flat lying and if liquefaction did trigger lateral spreading, it would only occur as localized failures. These areas of liquefaction potential are not located near proposed mining pits, processing areas, or roadway improvements and would not impact the Project construction or Project operations.

   Subsidence is the lowering or settlement of the ground surface due to a substantial decline in groundwater levels, extraction of oil, underground mining, or the presence of an underground void or cave. These conditions do not exist at the Project site. While the Project proposes to extract groundwater, the volume that is proposed to be extracted would not cause a substantial decline in groundwater levels or increase the potential of surface subsidence in the basin (see Section 3.10.4.3 in Section 3.10, *Hydrology and Water Quality*).

Soil and rock units can collapse due to the removal of underlying support; for example, rock or soil collapse can occur in areas overlain by lava tubes, caves, limestone cavities, or old mine shafts. These conditions do not exist at the Project site, nor would they be created by the Project and thus soil collapse is not considered a potential impact.

d) ***Be located on expansive soil, creating substantial direct or indirect risks to life or property.*** Previous laboratory testing of Project site soils determined that they do not exhibit shrink-swell properties and thus are not expansive (see SGS 2016 in Appendix G.1). Further, geotechnical investigations that are required prior to construction would require removal and replacement of expansive soils if they were identified. No impact would occur with respect to expansive soils because the removal and replacement of soils with shrink-swell characteristics, if present, would preclude the location of Project infrastructure on such soils and thereby avoid related impacts to life or property. Therefore, the Project could not contribute to an impact with respect to expansive soils.

3.7.4.3 Project Impacts

Impact 3.7-1: Seismic hazards could cause adverse effects including the risk of loss, injury, or death during a seismic event. (Less than Significant)

This impact discussion corresponds to Significance Criteria (a(i)), (a(ii)), and (a(iii)) (see Section 3.7.4.2, above) and addresses the primary seismic hazards of fault rupture, seismic ground shaking, and liquefaction. As indicated, this impact analysis considers the indirect and direct impacts of the Project during construction and operation, including for the mining pits, processing plant, conveyor belts, rail spur, access road, roadway improvements, and reclamation.

Fault Rupture

The Project site borders the Sargent Fault Alquist-Priolo Earthquake Fault Hazard Zone to the north. While the Project site does not overlie the zoned portion of this fault zone, a potentially active branch or “splay” fault trace within the Sargent fault zone has been identified in the central portion of the Project site (Phase 1 and 2 area) and is considered a County Fault Rupture Zone. Considering its relatively short length, history of past activity (1.6 million years ago to 700,000 years ago), and that it occurs as a branch fault off the main trace of the Sargent Fault, the splay fault would not be a source of earthquakes large enough to produce substantial ground rupture. Any damage resulting from an earthquake along the splay fault would be minor (Bryant and Hart 2007).

Construction

Phase 1 and 2 Conveyor Belt, Processing Plant, Tar Creek Bridge, and Rail Spur

Fault rupture would not adversely affect construction of the processing plant, Tar Creek Bridge, rail spur, or Phase 1 and 2 conveyor belt because these Project components do not cross the trace of the Sargent splay fault.

Phase 3 and 4 Conveyor Belt and Road Improvements

Fault rupture would not adversely affect Phase 3 and 4 site construction, conveyor belt installation, and road improvements because these project components do not cross the trace of the Sargent splay fault. The probability of an earthquake occurring during the 9-month construction period is far lower than the probability of an earthquake occurring over the period of operation and reclamation. If an earthquake did occur, the degree of damage and injury to workers would depend on the magnitude of the event and the phase of construction. Although unlikely, if the Sargent splay fault ruptured, it could damage the access road improvements and the Phase 3 and 4 conveyor belt (to be constructed in 2046) at the point that they intersect the fault, but damage would be localized and minor because substantial surface offset is unlikely. The impact of fault rupture during construction is **less than significant**.

Operation

Mining Pits

Surface fault rupture from the Sargent splay fault could cause slope instability and trigger localized landsliding in the Phase 1 and 2 pits leading to some disruption and sloughing of quarry material on the slopes but would be contained by the benching system on the quarry slopes. The impact would be **less than significant**.

Phase 1 and 2 Conveyor Belt, Processing Plant, Tar Creek Bridge, and Rail Spur

An earthquake on the Sargent or a larger regional fault that is capable of causing surface rupture across the Sargent splay fault is possible but not likely. The processing plant, Phase 1 and 2 conveyor belt, Tar Creek bridge, and rail spur would not be affected because these facilities do not cross the trace of the fault.

Phase 3 and 4 Conveyor Belt, Access Roads, Road Improvements

Although unlikely, if fault rupture did occur along the Sargent splay fault, ground deformation could occur as localized surface offsets causing minor damage to the roadway improvement, the Phase 3 and 4 conveyor belt, and access roads. If the surface fault offset is sufficient to displace roadway or the conveyor belt equipment, the damage would be likely be minor and repairable. The risk of loss, injury, or death would be low, and the impact would be **less than significant**.

Reclamation

Surface fault rupture could cause minor slope instability, sloughing in the reclaimed slopes of the Phase 1 and 2 pits but considering their finished grades (greater than 2:1) damaging failure would be minimal to moderate. The impact would be **less than significant**.

Summary for Fault Rupture

The probability of surface fault rupture from the Sargent splay fault is low, and damage that could occur would be minor. Furthermore, the Project would not exacerbate future seismic hazards or unstable soils at the Project site that could result in a substantial risk of loss, injury, or death because the project would not place mining construction, operational, or reclamation components across the trace fault. Impacts associated with fault rupture during operation and through reclamation would be **less than significant**.

Seismic Ground Shaking

The Project lies within a seismically active region of California, which will likely experience an earthquake of magnitude 6.7 or higher before 2045 (Field 2015). Faults capable of producing significant earthquakes and potentially experiencing fault rupture in the Bay Area include the San Andreas, Hayward-Rodgers Creek, Calaveras, Concord–Green Valley, Marsh Creek–Greenville, and the San Gregorio faults and to a lesser degree, potential displacement on the Sargent fault. The splay fault, located extending through the central portion of the Project site (Phase 1 and 2 area), has a low potential to displace and cause an earthquake because of relatively short length and history of past activity (1.6 million years ago to 700,000 years ago). Given its location between the San Andreas and the Sargent Fault Zones, ground shaking could be strong to violent, depending on the causative fault and location of the epicenter.

Construction

Conveyor Belt, Processing Plant, Tar Creek Bridge, Rail Spur, Road Improvements, Screening Berm

Ground shaking from a large regional earthquake could affect and likely damage site improvements under construction. Ground motion could weaken and collapse earthen structures such as berms, road grades, and building pads, and potentially cause injury to workers. This is an inherent risk with projects constructed in this or any seismically active region. However, Project construction would not exacerbate future seismic hazards or unstable soil conditions. The Project would not increase the risk of loss, injury, or death during an earthquake because road grading, earthen berms, slope improvements, and structural elements would be designed to building code standards, thereby making them more resistant to earthquake ground shaking. The impact of seismic ground shaking during construction would therefore be **less than significant**.

Operation and Reclamation

Mining Pits

Strong ground shaking could weaken slopes within the mining pits during operation and after reclamation. The most substantial effects would likely be during operation when mining slopes are being excavated. During this period, the slopes would be at the steepest inclinations with no vegetation and susceptible to failure during an earthquake. Degree of failure would depend on the magnitude of the earthquake, location of the slopes and the slopes' response to ground motion. The stability of mining slopes under earthquake ground shaking conditions is discussed further in Impact 3.7-2. During and after reclamation activities, mining pit slopes would be "laid back" to reduce steepness and would be vegetated. Reducing slope steepness and established vegetation would reduce the potential for slope failure during an earthquake.

The potential for earthquakes to be generated from mining operation proposed as part of the Project is very low. Mining on or near active faults can generate low magnitude (i.e., magnitude 2 to 5), localized earth movements (also referred to as micro-earthquakes). These events are generally associated with surface or subsurface mines that extend deep into the earth where localized fault displacement can be triggered by earth pressures that are created by subsurface blasting, large water impoundments, and/or by localized upwarping.[16] However, the rate of removal and volumes of rock materials that are proposed to be mined would not be sufficient to cause upwarping and noticeable ground motion. Grading to loosen rock would cause ground vibrations but would not generate motion capable of triggering fault displacement. Water impoundments created in the mining area would not be large or deep enough to impose considerable ground pressures.

Conveyor Belts, Access Road, Processing Plant, Rail Spur, and Roadway Improvements

Strong to violent ground shaking generated from a regional earthquake could cause damage to built structures and other improvements and could cause injury to site workers. The proposed structural components of the Project, namely the built structures associated with the processing plant, the Tar Creek Bridge, and the above-ground structural elements of the linear components (conveyor belt, rail spur, access road, and roadway improvements) would be required to undergo appropriate design-level geotechnical evaluations prior to final design and construction in accordance with CBC Chapter 18. Implementing the regulatory requirements of the then current CBC, compliance with the Santa Clara County Geologic Ordinance (Title C, Division C12, Chapter IV of the County of Santa Clara Ordinance Code), compliance with the CGS Guidelines for Evaluating and Mitigating Seismic Hazards in California, and ensuring all buildings and structures are constructed in compliance with the law, would be required for Project engineers and building officials, as also detailed in CBC Chapter 18. Compliance with foundation and structural seismic design criteria as required by the CBC and County ordinances, would minimize the potential for damage from strong seismic ground shaking. While the built components (processing plant) and linear structures (conveyor belt, rail spur, access road and roadway improvements) could undergo minor to moderate structural damage during a large earthquake, they would be unlikely to collapse.

Summary for Seismic Ground Shaking

The Project's proposed mining activity would not increase the likelihood or frequency of earthquakes or enhance the effects of seismic ground shaking that could result in a substantial risk of loss, injury, or death. because the proposed mining activity would not involve deep mining near faults where earth pressures created by the mining could trigger micro-earthquakes. The Project site would experience ground shaking from a major earthquake on a regional fault system sometime during the operation period of the mining and reclamation. Substantial ground shaking could injure site workers. Built structures could be damaged but with the required compliance of building codes, structural collapse is less likely. Access roads and mine slopes could become unstable and fail during an earthquake both during the operational and reclamation phases of the Project. Earthquake-related ground shaking is an inherent risk of development in a seismically active region. Impacts associated with seismic ground shaking would be **less than significant**.

[16] Upwarping is the upward flexing of earth materials (i.e., bedrock) due to the release of overlying pressures as material is removed during mining)

Liquefaction

Liquefaction is a type of earthquake-induced ground failure that occurs when relatively shallow, loose, granular, water-saturated soils behave similarly to a liquid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions exist: (1) shallow (50 feet bgs or less) groundwater; (2) low-density non-cohesive (granular) soils; and (3) high-intensity ground motion. Saturated, loose to medium-dense, near-surface non-cohesive soils and cohesive soils exhibit the highest liquefaction potential. Liquefaction usually results in horizontal and vertical movement of soils from lateral spreading (i.e., lateral displacement of gently sloping ground) of liquefied materials and post-earthquake settlement of liquefied materials. The effects of liquefaction on level ground include potential seismic settlement, sand boils, ground oscillation, and bearing capacity failures below structures.

Liquefaction zones, as delineated by the County GHZ database[17], are located south of the Project boundary between the Union Pacific Railroad tracks and the Pajaro River (at the southern Santa Clara County line) and southeast of Project boundary along the Pajaro River between the Union Pacific Railroad tracks and Betabel Road. A larger area of potential liquefaction hazards is delineated within the younger valley alluvial deposits east and across U.S. 101 from the Project site. These delineated areas of potential liquefaction hazard do not encroach into the proposed mining pit area, proposed processing plant, or proposed roadway improvements.

Construction and Operation

Mining Pits, Conveyor Belts, Access Road, Processing Plant, Rail Spur

Liquefaction potential is low within the proposed development footprint of the Project because of the deep groundwater levels and heterogenous mixtures of fine- to coarse-grained geologic materials. No liquefaction hazard zones were identified within the mining pits or areas slated for eventual reclamation. Liquefaction would not impact stationary built structures, including the processing plant, and linear structures such as the conveyor belts, rail spur, and access road because the geologic materials underlying these components are not susceptible to liquefaction.

Roadway Improvements

The proposed roadway improvements would not be susceptible to liquefaction. Zones of liquefaction-susceptible sediments were delineated along the Pajaro River between the Union Pacific Railroad tracks and Betabel Road southeast of the project Boundary but south of the area of the proposed roadway improvements (County of Santa Clara 2012).

Reclamation

Roadway improvements would remain in place to support future cattle ranching uses at the site. **No additional impact** would occur during reclamation (relative to construction and operation) because the issue of liquefaction-susceptible sediments would have been addressed at the time of installation of the improvements.

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[17] Santa Clara County's GHZ database maps indicate areas within which the County Geologist may require specific geologic reports prior to approval of development applications.

Summary for Liquefaction

While there are areas delineated as containing potentially liquefiable materials south and southeast of the Project site along the Pajaro River and east of Highway 101, the proposed mining, processing, subsequent reclamation, and roadway improvements would not intersect these areas. The Project construction, quarry operation or reclamation would not increase the potential of liquefaction. Construction and operational impacts associated with liquefaction would be **less than significant**.

Summary

The probability of surface fault rupture from the Sargent splay fault is low, and damage that could occur would be minor. The Project site would likely experience ground shaking from a major earthquake on a regional fault system sometime during the operation period of the mining and reclamation. During an earthquake, built structures could be damaged but structural collapse is less likely while access roads and mine slopes could become unstable and fail. There are limited areas delineated as susceptible to liquefaction ground failure along the Pajaro River south, southeast, and east of the Project site, but these areas would not affect the proposed Project components. Seismic hazards are an inherent risk of development in a seismically active region. However, mining activity proposed by the Project would not increase the likelihood and frequency of earthquakes or enhance the effects of seismic ground shaking that could result in a substantial risk of loss, injury, or death. Impacts associated with seismic hazards would be **less than significant**

Mitigation: None required.

Significance: Less than significant

Impact 3.7-2: Excavation of quarry pits and reclamation would increase the potential for slope instability and slope failure. (Less than Significant with Mitigation Incorporated)

This impact assessment corresponds to Significance Criteria (a(iv)) and (c) (see Section 3.7.4.2, above) and addresses the potential for mining pits, road grades, and stockpiles to become unstable and fail. Impacts associated with lateral spreading, soil collapse, and subsidence are not considered in this analysis. Lateral spreading can occur on slopes and near-level ground undergoing liquefaction during an earthquake. Lateral spreading is not relevant for the project because areas with liquefaction potential do not intersect Project components. Soil collapse and subsidence also are not considered in this impact analysis because the Project site is underlain by dense, consolidated marine and non-marine sediments, which are unlikely to collapse under seismic or non-seismic conditions. Further, the Project site does not overlie a groundwater basin and is therefore not susceptible to subsidence either through withdrawal groundwater or from seismic ground shaking. See additional discussion of lateral spreading, subsidence, and soil collapse in Section 3.7.4.2, *Significance Criteria.*

Construction

Construction of the processing plant, conveyor belts, access road, Tar Creek bridge, road improvements, and rails spur would not cause or exacerbate slope instability or failure because construction activities do not involve grading high slopes or over-steepening existing slopes.

Operation and Reclamation

Processing Plant, Rail Spur

Project components outside the active mining area and mining pit reclamation areas, including the processing plant, rail spur, and access roads would not be impacted from slope instability or failure, because they would be constructed at grade on relatively flat land.

Mining Pits, Conveyor Belts, and Access Roads

Slope instability could occur on the mining pit slopes during the pre-mining period, during active mining, and during and following reclamation. In addition, given that the conveyor and internal access roads are proposed to be in graded areas adjacent to slopes and near the pits, these components could be impacted by slope instability and failure if it were to occur during mining.

SGS completed its soil stability analysis in September 2016 (SGS 2016) and in January 2017, Golder Associates (Golder) performed a comprehensive technical review of the SGS methodology and assumptions. SGS then performed additional slope stability analysis (SGS 2017). Golder submitted a response in October 2017 (Golder 2017b) and concurred with the Applicant’s conclusion that slope failure is a potential hazard, both during quarry operation and reclamation, and concluded that the Project appears to incorporate a practical approach to mitigating the potential slope stability hazard. The County and its environmental consultants have independently reviewed these materials and, together with other information in the record, find them to be suitable for reliance as part of the CEQA process. Accordingly, the analysis below incorporates the initial SGS soils stability analysis (SGS 2016), the Golder peer review (Golder 2017a), the supplemental slope stability analysis (SGS 2017), and Golder’s supplemental geotechnical peer review (Golder 2017b); each of these is provided in Appendix G.

Existing and future stability of a slope can be determined through slope stability modeling that considers the characteristics of the geologic materials, steepness, the orientation of the underlying beds, the depth to groundwater beneath the slope, and the presence of fractures and joints. The results of the modeling analysis provide a factor of safety (FS). The FS is found by dividing the forces that resist movement in the slope (such as cohesion in clays) by the forces that cause movement (i.e., gravity or water). A slope that is stable would have a FS of 1.0 or greater, while slopes below 1.0 would have the potential to fail as a landslide or slump. The less steep a slope is, the higher the FS as it is less prone to failure. Earthquake ground motion represents a force that drives movement and can substantially lower the FS in a slope. Slope failure without earthquake ground motion is referred to static failure and under earthquake forces is referred to as pseudo static or seismic.

SGS (2016) used slope stability modeling to determine the FS for the proposed reclamation slopes in the mining pits. Model results found that in areas where rocks were oriented to incline (dip) toward the mining face at 0 to17-degree angles and/or daylight[18] at the mining face, the FS under seismic conditions were below 1.0 (0.68 to 0.81) (SGS 2016). This indicates that these slopes may fail at the proposed reclamation slope of 3:1. In locations where the rock units were oriented across the mining face (cross-bedded), the FS were higher (1.5 to 2.1) indicating they would likely remain stable. At two of the highest, worst-case slopes at the northwest portion of the proposed mining area, a pseudo-static analysis indicated an acceptable seismic FS of 1.26 to 1.34 (SGS 2016).

Proposed reclamation slopes that would be at an inclination of 2:1 (with 10-foot benches every 30 feet vertically), were found to be marginally stable to unstable under static conditions, but the modeling showed that reducing the slope to 3.5:1 to 4:1 improved the FS in the range of 1.0 to 1.3. However, analysis under seismic conditions resulted in an FS less than 1.0. It should be noted that the calculations used for the seismic conditions utilized conservative seismic coefficients[19] and the use of more standard coefficients could result in a significantly higher FS. Further, this analysis is based on assumptions related to buried soil conditions that cannot be verified until mining occurs, and the soil conditions are exposed (SGS 2016).

The Project includes 105 acres of geotechnical setback areas to address instability under static and seismic conditions and to allow area for landslide remediation if needed. A geotechnical setback buffer allows a safe setback between cut slopes and adjacent areas, and to account for any unanticipated slope instability associated with mining activities. These areas are upslope from the quarry highwalls so slopes can be flattened to 3:1 to 4:1 if needed to improve slope stability during operation or at reclamation. These geotechnical setback areas would not be mined but may be excavated to lay back the slope of a quarry wall to achieve greater stability.

SGS (2016) concluded that the site geology is complex and that minor to moderate failure of pit walls could occur both during excavation and at final reclaimed orientations. The type of rock and sediment, as well as the highly sheared and deformed character of these materials near faults, would affect the overall mass strength of the bedrock materials creating localized conditions susceptible to potential slope instabilities (SGS 2016). Slope stability of the quarry cut slopes during mining operation could be below the required FS, as specified by generally accepted engineering practices and MSHA safety regulations. These slopes could fail under certain conditions encountered during mining (i.e., exposing weak bedding, groundwater). Despite the inclusion of the geotechnical contingency areas, slope failure could result in loss, injury, or death of workers within the mining area or adversely impact biological habitat if a significant seismic-induced or static slide occurs involving areas outside the designated mining locations. Reclamation slopes may undergo failure under seismic loading and may comply with SMARA standards. This impact is **significant** because excavation of quarry pits and reclamation would increase the potential for slope instability and slope failure.

[18] Daylighting means an exposure of a planer surface (layer or "bed" a rock or fault face) by an open cut (i.e., vertical mining pit face) whose angle is steeper than the exposed bed or fault.

[19] A seismic coefficient is used in seismic analysis and represents the amount of horizontal acceleration a structure would be subjected to. The acceleration due to gravity (g), is approximately 980 centimeters per second squared. In terms of automobile acceleration, 1 "g" of acceleration is equivalent to the motion of a car traveling 328 feet from rest in 4.5 seconds.

Mitigation Measure 3.7-2a: This mitigation measure applies to the mining pits during mining and reclamation. Throughout the mining operation and reclamation slope grading, the Applicant shall retain a licensed geotechnical engineer to inspect the mining area and monitor construction of the quarry cut slopes twice annually and each time a new 30-foot bench has been excavated. Upon completion of each inspection, the geotechnical engineer shall submit a report to the County and Applicant detailing observations of subsurface conditions, descriptions of potential in-slope failure mechanism (i.e., failure planes, faults, jointing, existing failure planes, and groundwater seepage) or any other concerns regarding the stability of the cut slopes. The geotechnical engineer shall prescribe remedial actions that shall be implemented by the Applicant. Remedial actions could include adjustments to proposed slope configurations (i.e., decreasing slope angle or attitude), additional groundwater seepage management, removal of failure-prone materials, and/or performing additional data collection and slope stability monitoring. After the report has been reviewed and approved by the County Department of Planning and Development, the Applicant shall implement the remedial actions in compliance with a timeline established by the County.

Mitigation Measure 3.7-2b: This mitigation measure applies to the mining pits during mining. During quarry operation, the Applicant shall implement a combination of the following measures to ensure slope stability:

- Localized layback, earth buttresses, and/or stabilization fills of individual slopes to accommodate for unfavorable bedding. This measure would be required when bedding is observed to be oriented and inclined and/or daylights toward the mining pit. This condition could indicate inherent instability in the slope.
- Remedial grading to remove in-place clayey topsoil/colluvium below the proposed stockpiles. This measure would remove potentially unstable or weak topsoil and loose colluvium from the base of the stockpile to ensure the stockpile is founded on competent material, reducing the likelihood of failure.
- Waste pile buttress fills or backfill to contain or mitigate surficial and/or minor translational failures.[20] This measure would be implemented when beds are observed to be oriented and inclined and/or daylight toward the mining pit and appear to have the potential to fail.
- For groundwater seepage, dewatering by horizontal drains, deep cutoff trenches, or gabion buttresses. Removal of groundwater would be necessary to reduce failure potential in a slope. Groundwater increases the potential of failure by adding weight to the slope and reducing the friction forces in soils and rock.

Observation and inspection during excavation of the quarry pits by a California Certified Engineering Geologist retained by the Applicant shall occur at a minimum of twice per year or any time that mining operations encounter conditions that vary significantly from conditions described in the Project's geotechnical slope stability report, for the term that the quarry is operational. The Engineering Geologist shall submit a report for review and approval to the County of Santa Clara Department of Planning and Development recommending any additional operational measures deemed necessary to ensure slope stability.

[20] Translational failures involve down-slope displacement of soil-rock material on a surface that is roughly parallel to the ground surface in contrast to a rockfalls or rotational slides.

Mitigation Measure 3.7-2c: This mitigation measure applies to the mining pits during reclamation. Prior to reclamation slope grading, the Applicant shall develop proposed final slope configurations that address and improve the factors of safety (FS) that are less than 1.0 under seismic loading conditions. The Project Applicant shall demonstrate in its analysis that a pseudo static FS of 1.0 or greater will be achieved by mitigation strategies such as placement of soil buttresses at the toe of slopes vulnerable to failure under seismic loading. In conjunction with Mitigation Measures 3.7-2a and 3.7-2b, the analysis and mitigation strategies prescribed by the measure would provide the supplemental information needed to demonstrate compliance with SMARA at reclamation.

Significance after Mitigation: Less than significant

Implementation of Mitigation Measures 3.7-2a, 3.7-2b, and 3.7-2c would provide ongoing review of localized conditions that indicate susceptibility to slope failure while mining is underway and at the time new mining slopes are excavated. Continual periodic inspection and evaluation throughout the mining phase of the Project would attain additional data and increase the overall understanding of the geologic structure and its response to mining excavation, thereby providing quarry engineers necessary information to inform and implement appropriate mitigation measures for a particular area. With ongoing evaluation of conditions and application of slope stability mitigation, impacts associated with slope stability and possible slope failure during mining and reclamation would be less than significant.

Impact 3.7-3: Activities associated with construction, mining and reclamation could result in accelerated erosion and loss of topsoil. (Less than significant)

This impact discussion corresponds to Significance Criterion (b) (see Section 3.7.4.2, above) and addresses the accelerated erosion and the loss of topsoil. This impact applies to the construction of the access roads, conveyor belts, processing plant, rail spur, and road improvements, and to operation and reclamation of the mining pits, access road, and roadway improvements.

Construction

Conveyor Belts, Access Roads, Processing Plant, Rail Spur, and Roadway Improvements

Erosion and sedimentation management during the construction phase of the Project would adhere to the requirements of the Construction General Permit (CGP) (see Section 3.10, *Hydrology and Water Quality)*. Construction activities include site grubbing[21] and clearing, access road construction (cut and fill slopes), sediment pond and staging area grading, and foundation pad grading. All of these activities expose bare soil, loosening it from its matrix to become susceptible to transportation by wind, rain, and vehicle traffic. The CGP requires the Applicant or its contractor(s) to implement construction Best Management Practices (BMPs) in accordance with a detailed construction Stormwater Pollution Prevention Plan (SWPPP). SWPPPs prescribe required erosion control and stormwater quality BMPs necessary to minimize pollutants in stormwater runoff. The BMPs are

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21 Grubbing is the operation to remove and disposing of all unwanted vegetative matter from underground, such as stumps, roots, buried logs, and other debris.

designed to prevent pollutants from contacting stormwater and to keep potential contaminants associated with construction activities from leaving the site. Given the CGP and SWPPP, the impacts of accelerated erosion and loss of topsoil during construction would be **less than significant**.

Operation and Reclamation

Mining Pits, Access Road, and Roadway Improvements

The Project would reduce the potential loss of native topsoil by removing and stockpiling it prior to mining and then redistributing and replacing it during reclamation.

Soil erosion could occur throughout the mining and reclamation phases of the Project during overburden removal and stockpiling, and mining. Highly concentrated storm runoff during the wet season, particularly in response to prolonged, intense storms, can result in accelerated erosion, which, with removal of vegetation and the exposure of bare soil surfaces to rain and vehicle operation, can form rills[22] and gullies.[23] In some cases, excessive runoff can cause gullies to expand in width and depth to a size capable causing damage to foundations, buildings, utilities, and roads. Accelerated erosion could cause the removal and loss of topsoil. Erosion could produce sediment that can be introduced to Sargent Creek, Tar Creek and eventually the Pajaro River. Eroded sediment could also enter and clog engineered facilities, such as drainage ditches and culverts; or be deposited at undesirable locations such as road surfaces, parking/staging areas, or working areas. Increased sedimentation also would require more frequent sediment removal from the sedimentation ponds.

Project operation would be required to adhere to the NPDES Permit for Industrial Activities (see Section 3.10.2.2), which includes specific water quality and hydrologic standards and requires monitoring of specified pollutants associated with the covered industrial activity and the subsequent correction of any water quality exceedances indicated by monitoring and reporting. The NPDES Permit also requires implementation of a Stormwater Pollution Prevention Plan (SWPPP), which has been prepared for the Project (Appendix I.4). The SWPPP includes a range of BMPs to control erosion, such as the use of water trucks to spray unpaved and paved roads, restriction of activities during wet weather, routine inspection of the access roads for erosion and/or spills, the expansion of drainage facilities and sedimentation basins (as needed), and the use of jute matting, erosion control blankets, wattles, silt fences and sediment traps to mitigate areas where runoff is concentrated to reduce sediment levels in site runoff. Soils would be revegetated as needed during operation to control erosion.

Ultimately, the entire site would be revegetated as part of reclamation, as discussed in Section 2.6.4 in Chapter 2. The Reclamation Plan includes specific standards and BMPs related to re-soiling, back filling, grading, slope stabilization, removal of structures and equipment, control of contaminants, erosion and sedimentation, and the protection of on-site and downstream beneficial uses of water (see Reclamation Plan, Section 4.5, Appendix B). Erosion and sediment control measures to be implemented during the reclamation phases of the project would include revegetation of disturbed slopes, benches, and valley floor areas. The

[22] A rill is a small channel cut out by water flowing over loose or otherwise erosion-susceptible soils.
[23] Gullies form when rills increase in size and carry and increased amount of water.

implementation of BMPs, such as jute matting, erosion control blankets, wattles, silt fences and sediment traps, would ensure areas where runoff is concentrated are managed such that erosion and the transport of sediment or other pollutants in the runoff is avoided or minimized. Reclamation activities would be monitored to ensure that reclamation of the site is done in compliance with the approved Mining and Reclamation Plan. The monitoring program incorporates site-specific criteria to measure compliance for specific reclamation activities including grading/topography, sediment and erosion control, revegetation, irrigation, and ongoing maintenance and monitoring. Therefore, the impact would be **less than significant**.

Summary

During construction, the CGP and associated SWPPP would minimize erosion and loss of topsoil. Compliance with the requirements of the NPDES Industrial Permit, including the implementation of associated BMPs as part of the SWPPP, as well as the requirements of SMARA and County Use Permit related to mining and reclamation, would manage surface water flows to reduce erosion damage caused by uncontrolled surface water runoff during large rain events, especially on bare ground, quarry slopes and stockpiles. Given these measures, the impacts of erosion and loss of topsoil during operations would be **less than significant**.

Mitigation: None required.

Significance: Less than significant

Impact 3.7-4: The site soils would not be incompatible with the proposed On-Site Wastewater Treatment System (OWTS). (Less than Significant)

This impact discussion corresponds to Significance Criterion (e) (see Section 3.7.4.2, above) and evaluates whether soils on the site are compatible with the development and use of an OWTS.

Construction and Operation

Mining Pits, Conveyor Belts, Access Roads, and Roadway Improvements

The on-site wastewater treatment plant would be located at the proposed processing plant. Therefore, this impact discussion applies to construction and operation of the processing plant only and is not applicable to the mining pits, conveyor belt, rail spur, access roads, or roadway improvements.

Processing Plant

The Project proposes installation of a new on-site septic system, or OWTS, near the processing plant to treat wastewater generated by toilets and sinks in the processing plant office, as well as one additional restroom facility in the processing plant area. The OWTS would be located near the processing plant and the leachfield would be placed in soils consisting of Zamora Clay Loam overlying older alluvial deposits. These soils are considered well-drained and would likely be suitable for an operable leachfield. The OWTS design and installation would be reviewed by the County of Santa Clara DEH through its permit process, consistent with Section B11-60 through

B11-95 of the County Ordinance Code. Soils types and percolation rates of soils within the leachfield and the system design would be reviewed for consistency with County OWTS requirements to ensure health hazards and nuisance conditions would not occur and that surface water and groundwater would not be significantly impacted. Testing as part of the permit process would ensure that on-site soils are capable of adequately supporting the OWTS.

The OWTS would require review, permitting, and, if certain alternative methods are used or if needed setbacks cannot be maintained, a renewable operating permit with inspections would be issued by the DEH. Because the new OWTS would be designed and constructed consistent with DEH requirements, and those requirements would require compliance prior to construction and operation to help assure soils would be capable of adequately supporting the use of the OWTS, this impact would be **less than significant**.

Reclamation

During final reclamation, the OWTS either would be abandoned per the terms of an abandonment permit from the County DEH subject to County Ordinance Code Section B11-86 or may be kept in operation to support cattle ranching uses. Under either circumstance, **no additional impact** would occur during reclamation because the issue of soil suitability would have been addressed at the time of installation of the OWTS.

Mitigation: None required.

Significance: Less than significant

Impact 3.7-5: Project excavation and grading could adversely affect paleontological resources. (Significant and Unavoidable)

This impact discussion corresponds to Significance Criterion (f) (see Section 3.7.4.2, above) and evaluates whether the Project would adversely affect paleontological resources. Technical information relied upon for this analysis is presented in the PaleoSolutions report provided as Appendix G.2.

The SVP has established guidelines for the identification, assessment, and mitigation of adverse impacts on nonrenewable paleontological resources (SVP 2010). Most practicing paleontologists in the nation adhere closely to the SVP's assessment, mitigation, and monitoring requirements as outlined in these guidelines, which were approved through a consensus of professional paleontologists and are the standard against which paleontological monitoring and mitigation programs are judged. The mitigation proposed for this impact relies on the definitions, methods, and qualifications described in these guidelines.

Construction

Mining Pits

Because the impacts of excavation within the mining pits would be ongoing during mining (operation) phases, paleontological impacts related to mining are addressed below under Operation. This includes the portions of the access road and conveyor belt alignments that are located within the mining pits as shown in Figures 2-9 and 2-10.

Conveyor Belts, Access Roads, Processing Plant, and Rail Spur

Grading and site clearing for development of the processing plant, rail spur, and much of the length of the conveyor belt and access road to Phases 3 and 4 would occur within Holocene-age alluvial deposits (Qa) with a PFYC of 2 (low), and this low potential to encounter fossils combined with the shallow nature of grading and excavation required for these components means that their impact would be less than significant. Small portions of the access road and conveyor belt alignment that fall outside of the mining pits could cross areas mapped as Etchegoin Formation (Te) with a PFYC of 4 (high). Grading, excavation, and placement of conveyor belt support structures for these facilities may have a high potential to destroy paleontological resources in the limited portions of these components located within the Etchegoin Formation, a **significant** impact.

Roadway Improvements

The proposed improvements to the existing Old Monterey Road would not result in excavation and therefore would have no impact on paleontological resources. The proposed U.S. 101 Northbound acceleration lane improvements would occur within Holocene-age alluvial deposits (Qa) with a PFYC of 2 (low) and a small area Quaternary older alluvium (Qoa) with a PFYC of 3 (moderate). The free-span bridge over Tar Creek also would be installed within an area mapped as Holocene alluvium (Qa) with a PFYC of 2 (low). The low to moderate potential to encounter fossils combined with the small amount of grading in areas of PFYC 2 and 3 and excavation limited to areas of PFYC 3 would result in a low potential to destroy paleontological resources, and the impact from these components would be **less than significant**.

Operation

Mining Pits

The proposed Sargent Quarry would be an open-pit sand and gravel quarry with surface mining occurring in four phases over 30 years. Sand and gravel deposits would be excavated to an approximate depth of 200 feet above sea level. No underground mining would occur; rather, hillslopes within mining areas would be cut back and mined over time, with the quarry floor no deeper than the base of the hillslopes, for an approximately 400-foot reduction in elevation when mining is complete.

Surface mining has the potential to uncover and damage fossil resources primarily in areas mapped as Etchegoin Formation (Te) with a PFYC of 4 (high) and unnamed Pliocene claystone (Tn) with a PFYC of U (unknown), along with small areas of Holocene alluvium (Qa) and landslide deposits (Qls) each with a PFYC of 2 (low). Nearly all of Phases 1 and 2 would be located in the Etchegoin Formation, and Phases 3 and 4 would be mostly within Etchegoin Formation and partially within

Pliocene claystone. While shallow excavations into Holocene alluvium and landslide deposits are unlikely to uncover significant fossil vertebrate remains, these deposits may overlie older paleontologically sensitive sedimentary deposits. Therefore, all of the excavation associated with surface mining in each of the phases has high potential to uncover paleontological resources. Destruction of heritage paleontological resources would be a **significant impact**.

Processing Plant, Rail Spur, Conveyor Belt, Access Road, and Roadway Improvements

Operation of the processing plant and associated facilities and the roadway improvements would not uncover, disturb, or damage paleontological resources, because there would not be any ongoing excavation in these areas; therefore, there would be **no impact** associated with long-term operation of these Project components.

Reclamation

Although reclamation activities would involve minor ground disturbance, all of the areas to be reclaimed would have been previously disturbed during construction and operation. Therefore, any impacts on paleontological resources would have occurred during those phases, and reclamation would have **no additional impact** on paleontological resources.

Summary

Construction of the processing plant, rail spur, conveyor belt, access road, and roadway improvements has low potential to disturb or destroy unique paleontological resources, except within small areas of moderate to high potential where the conveyor belt and access road cross areas mapped as Etchegoin Formation (Te) and the U.S. 101 improvements cross Quaternary older alluvium (Qoa). Destruction of heritage paleontological resources, most likely to occur in these high and moderate potential areas (PFYC 3 and 4), would be a **significant** impact.

Mining activities, including excavation and grading associated with the Project, have the potential to uncover and damage heritage paleontological resources important to the County of Santa Clara. This impact is **significant** due to the extensive excavation associated with mining activities in areas with high, moderate, and unknown potential for paleontological.

> **Mitigation Measure 3.7-5:** This measure applies to construction of the Phase 3 and 4 conveyor belt and access road within areas mapped as Etchegoin Formation (Te) with a PFYC of 4 (high), as well as to all ground-disturbing activities (whether considered construction or operation) within the mining pits (Phases 1 through 4) and geotechnical setback areas.
>
> The Applicant shall retain a qualified paleontologist meeting Society of Vertebrate Paleontology (SVP) standards to oversee the preparation of a paleontological resources monitoring plan (PRMP). The PRMP shall be prepared prior to the start of construction and mining activities, reviewed and approved by the County Department of Planning and Development, and implemented by a qualified paleontologist. The PRMP shall provide guidance for paleontological field surveys, fossil sampling, spot checking/monitoring, reporting, curation, and on-call response to fossil discoveries that occur for the duration of the Project construction and operation. The PRMP shall detail the following components:

a) ***Worker Training.*** The qualified paleontologist shall prepare and implement a worker training program to inform construction and mining personnel of the possibility for fossil discoveries. The training program shall provide an overview of the paleontological sensitivity of the site and the potential to uncover fossil remains. The training program shall instruct personnel to immediately inform their supervisor if any bones, teeth, or other substantial fossil remains are unearthed. In such a case, workers shall immediately cease activity within a 50-foot radius of the discovery site until a qualified paleontologist can examine and evaluate the find per item (b) below. Work may not resume in the discovery area until it has been authorized by the County. The training shall be provided to new personnel prior to beginning work on the site and such trainings should be coordinated with the site manager and should coincide with spot checking/sampling visits. Verification of training will be provided as an appendix to the annual report submitted to the County Department of Planning and Development described in item (f).

b) ***Evaluation and Salvage of Fossils.*** If any bones, teeth, or other fossil remains are unearthed in the course of ground disturbance, work will cease as directed in item (a) and a qualified paleontologist will examine and evaluate the find. In the event that the qualified paleontologist deems the fossil significant according to SVP Guidelines (2010) and recommends it for curation, the qualified paleontologist shall propose salvage measures in consultation with the Applicant, and the salvage measures shall be reviewed and approved by the County Department of Planning and Development and shall be carried out by or under the direct supervision of the qualified paleontologist. Curation shall follow the process directed in item (e).

c) ***Paleontological Survey.*** At least 30 days prior to the start of surface disturbance in any new portion of the Project site that is not low potential (e.g., at the beginning of the Project construction period, when construction on the Phase 3 and 4 access road and conveyor belt begins, or when excavation of a new mining phase begins), a paleontological survey shall be conducted by a qualified paleontologist for the area to be disturbed to allow for in situ documentation and collection of surficial fossils. Following each survey, a paleontological survey memorandum shall be prepared. The first survey memorandum prior to the start of construction shall be submitted immediately upon completion to the County Department of Planning and Development. Subsequent surveys during the life of the Project can be compiled and submitted as part of the annual paleontological mitigation report described in item (f).

d) ***Spot Checks During Mining.*** A qualified paleontologist shall conduct periodic spot checks (at least six times per year) for the duration of mining activities that impact native Etchegoin Formation (Te), unnamed claystone (Tn), and Pleistocene older alluvium (Qoa). This includes all of Phases 1 through 4. The qualified paleontologist shall check for the presence of any recently uncovered macrofossils or layers that should be sampled for microfossils. The need for, frequency, and timing of the spot checks shall be outlined in the PRMP, and during implementation the actual need, frequency, and timing shall be based on the PRMP and coordinated with the Applicant based on real-time excavation activities and locations. The frequency of spot-checking efforts in a given portion of the quarry area may be reduced at the recommendation of the qualified paleontologist with approval from the County Department of Planning and Development if it is determined that only previously disturbed, imported, or Holocene-age alluvial sediments are being impacted, or if sediments are deemed to be non-conducive to fossil preservation. Dates and results of spot checks shall be recorded and reported as described in item (f).

e) ***Sample Identification and Curation.*** The qualified paleontologist shall ensure that all fossils and bulk matrix samples collected at the Project site during work stoppages (if resources are found during ground disturbance), paleontological surveys, or spot checks are removed to a secure paleontological laboratory within 30 days of collection from the field for preparation to the point of identification and curation in accordance with SVP Guidelines (2010). All data, including the results of the analysis and research on the fossil collection, shall be compiled along with the fossil specimen inventory and detailed paleontological locality forms, maps, and photos for inclusion in the annual paleontological mitigation report described in item (f).

f) ***Annual Reporting.*** The annual paleontological mitigation report shall be submitted to the County Department of Planning and Development and, if fossils are discovered, to the University of California Museum of Paleontology (or other equivalent fossil repository). The annual paleontological mitigation report shall also include dates of field work, results of spot checking, survey and sampling, fossil analyses, significance evaluation, conclusions and future recommendations, locality forms, and an itemized list of specimens. Detailed survey reports and verification of new mining personnel paleontology trainings shall be included as appendices. The PRMP shall identify an annual due date for the report.

Significance after Mitigation: Less than significant for construction; significant and unavoidable for operation.

Implementation of Mitigation Measure 3.7-5 would reduce the potential to inadvertently destroy paleontological resources during construction by conducting pre-construction surveys of areas that have the potential to contain such resources, by training workers to recognize such resources if they are uncovered during construction, and by ensuring that resources that are discovered during either surveys or excavation activities are treated appropriately. Because this measure would provide for the identification and curation of most or all fossils that could be encountered during the limited construction-period ground disturbance in high fossil potential areas, the construction-period impact would be reduced to **less than significant with mitigation**.

During Project operation, implementation of Mitigation Measure 3.7-5 would reduce the potential to inadvertently destroy paleontological resources through periodic surveys of areas that have the potential to contain such resources, training workers to recognize such resources if they are uncovered during operation, and ensuring that resources that are discovered during either surveys or excavation activities are treated appropriately through the implementation of a monitoring plan to ensure preservation of paleontological resources. Spot checks would be required in the monitoring plan throughout the mining period as well as salvaging and preparing significant fossil finds for curation, which would increase the likelihood that such resources are identified prior to being damaged by project activities. Full-time monitoring for the life of the project is not feasible, particularly given that there are geologic units of both high and moderate and unknown paleontological potential within the Project site. For these reasons, the potential for inadvertent damage to or destruction of paleontological resources would remain. Therefore, this impact would therefore remain significant and unavoidable during operation.

3.7.4.4 Cumulative Analysis

Geology and soils impacts tend to be site-specific and depend on the local conditions. For these reasons, the geographic context for potential cumulative impacts of geology, seismic hazards, and soil resources is the Project site and areas in the site vicinity with similar soil and geologic conditions. For example, slope failure would occur only on the Project site and would not trigger slope failures off-site or at the sites of cumulative projects listed in Table 3.1-1. While the Project could exacerbate slope instability within the mining pits, it would be confined to the site and would not combine with projects on adjacent sites or with any other off-site projects. For these reasons, the Project would not contribute to cumulative geologic or soils impacts.

The cumulative context for paleontological resources includes those areas in the Project vicinity in areas that have geologic conditions similar to the Project site.

Impact 3.7-6: The Project would contribute to the cumulative loss of paleontological resources. (Significant and Unavoidable)

The Project would result in a significant paleontological resources impact during operation, as the deep excavation in the surface mining pits would occur in areas with high, moderate, and unknown potential for paleontological resources as shown in Figure 3.7-1. The cumulative projects would be located in areas of primarily low paleontological sensitivity, with small pockets of moderate sensitivity. The primary cumulative project that would contribute to a cumulative impact in combination with the Project is the U.S. 101 widening from Monterey Road to SR 129, which would occur mostly within areas of low potential (Qa, PFYC 2) but may extend into some areas mapped as moderate (Qoa, PFYC 3) to high (Te, PFYC 4) potential. Paleontological mitigation measures for the US 101 widening project are unknown as of publication of this Draft EIR. However, monitoring for fossils is feasible given the short-term nature of roadway construction. Such monitoring could reduce the US 101 widening project's potential contribution to cumulative paleontological impacts. However, due to the large area of excavation associated with this Project's proposed surface mining, the cumulative paleontological impact would be significant, and the Project's contribution would be cumulatively considerable and thus **significant**.

> **Mitigation Measure 3.7-6:** Implement Mitigation Measure 3.7-5 (requiring worker training, surveys, spot checks, curation, and annual reporting). Mitigation Measure 3.7-5 would reduce the impact on paleontological resources, but for the reasons described in Impact 3.7-5, it would not reduce impacts to below the level of significance. Therefore, the overall impact would remain cumulatively considerable and significant and unavoidable, with the Project making the primary contribution to this impact.
>
> **Significance after Mitigation:** Significant and unavoidable

3.7.5 References

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3.8 Greenhouse Gas Emissions

3.8.1 Introduction

This section evaluates the greenhouse gas (GHG) emissions impacts of the Project. The following discussion is based, in part, on a GHG emissions calculations prepared by Illingworth & Rodkin, Inc. in February 2017 and revised in August of 2021 (Illingworth & Rodkin, Inc. 2021). Calculation tables and model output from that analysis are included as Appendix D to this EIR.

3.8.1.1 Greenhouse Gas Emissions and Global Climate Change

Climate change is caused by GHGs emitted into the atmosphere around the world from a variety of sources, including the combustion of fuel for energy and transportation, cement manufacturing, and refrigerant emissions. GHGs are those gases that have the ability to trap heat in the atmosphere, a process that is analogous to the way a greenhouse traps heat. GHGs may be emitted as a result of human activities, as well as through natural processes. Increasing GHG concentrations in the atmosphere is leading to global climate change resulting in direct and indirect impacts to loss in snow pack; sea-level rise; more extreme heat days per year; more high ozone days; more extreme forest fires; more severe droughts punctuated by extreme precipitation events; increased erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation (OPR 2018).

Carbon dioxide (CO_2) is the most important anthropogenic GHG because it comprises the majority of total GHG emissions emitted per year and it is very long-lived in the atmosphere. Other common GHGs include methane (CH_4), nitrous oxide (N_2O), and halocarbons (a group of gases containing fluorine, chlorine, or bromine). Typically, when evaluating GHG emissions they are expressed as CO_2 equivalents, or CO_2e, which is a means of weighting the global warming potential (GWP) of the different gases relative to the global warming effect of CO_2, which has a GWP value of one. Other GHGs, such as CH_4 and N_2O, which are commonly found in the atmosphere, but at much lower concentrations, have a GWP of 21 and 310, respectively. In the United States, CO_2 emissions account for about 80 percent of the GHG emissions, followed by CH_4 at about 10 percent and nitrous oxide at about 7 percent (USEPA 2021).

3.8.2 Regulatory Setting

3.8.2.1 Federal

The U.S. participates in the United Nations Framework Convention on Climate Change (UNFCCC). In 2007, the U.S. Environmental Protection Agency (USEPA) identified CO_2 as an air pollutant as defined under the Clean Air Act, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA has promulgated several GHG regulations, which for the most part, apply to larger facilities that emit large amounts of CO_2 or its equivalent in other regulated GHGs. These regulations include the Federal Mandatory Reporting of Greenhouse Gases (Mandatory Reporting Rule) and the Title V Greenhouse Gas Tailoring Rule (Tailoring Rule). The Mandatory Reporting Rule, which requires reporting of CO_2 and other GHG emissions, applies to particular facility types that emit GHGs (primarily large facilities that emit 25,000 metric tons per year or more of CO_2e emissions) and to most upstream suppliers of fossil fuels and industrial GHGs, as well as to manufacturers of vehicles and engines (USEPA 2009). Since the quarry would emit well under 25,000 metric tons CO_2e per year, it would not be subject to this rule.

The USEPA also issued a rule addressing GHG emissions from stationary sources and requirements under Title V and Prevention of Significant Deterioration (PSD) permitting programs. This rule is known as the PSD and Tailoring Rule. The Sargent Quarry would not be a major GHG source under the PSD or Tailoring Rule permit regulations.

Light-Duty Vehicle Greenhouse Gas and Corporate Average Fuel Economy Standards

In addition to setting emission standards for stationary sources, the USEPA sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such as trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The USEPA also sets nationwide fuel standards, such as the Corporate Average Fuel Economy (CAFE) standards (adopted in 2010) that require improved fuel economy and lower GHG emissions.

In 2018, the USEPA and the U.S. Department of Transportation’s National Highway Traffic Safety Administration (NHTSA) proposed the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One and Part Two. Part One revokes California’s authority to set its own fuel economy and greenhouse gas standards and zero-emission vehicle mandate, and Part Two increased the federal greenhouse gas emissions and fuel economy standards (84 Federal Register 51,310 for Part One and 85 Federal Register 24,173 for Part Two).

On April 22, 2021, NHTSA proposed to formally roll back portions of the SAFE Rule, thereby restoring California’s right to set more stringent fuel efficiency standards. NHTSA is also planning to issue a new rule to increase the national fuel economy standard for light duty vehicles beyond those in Part Two of the SAFE Vehicles Rule (Federal Register 2021).

3.8.2.2 State

In response to the increasing body of evidence that GHGs will continue to affect the global climate, the State has enacted key legislation and promulgated regulations in an effort to reduce the State’s contribution to climate change.

Executive Orders

There are three primary EOs related to the State’s GHG reduction efforts. In general, EOs provide direction to State government agencies but do not place mandates on regional or local governments or the private sector.

- **EO S-03-05:** Established GHG-reduction targets for 2010 (2000 emission levels), 2020 (1990 emission levels) and 2050 (80 percent below 1990 levels).

- **EO S-30-15:** Established a GHG reduction target for 2030 (40 percent below 1990 levels).
- **EO B-55-18:** Established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." This EO directs CARB to ensure future Climate Change Scoping Plans (discussed below) identify and recommend measures to achieve the carbon neutrality goal.

Assembly Bill 1493

California Assembly Bill 1493 of 2002 (Pavley) required the California Air Resources Board (CARB) to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Responsive regulations adopted by CARB apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce GHG emissions from light duty passenger vehicles in California by an estimated 18 percent in 2020 and by 27 percent in 2030 (CARB 2021b).

Assembly Bill 32 and Senate Bill 32

In 2006, Assembly Bill 32 (AB 32), the *California Global Warming Solutions Act of 2006* was adopted and codified in California Health and Safety Code Division 25.5. Under AB 32, CARB established a statewide GHG emissions cap for 2020, adopted mandatory reporting rules for significant sources of GHGs, and adopted a comprehensive plan, known as the Climate Change Scoping Plan, identifying how emission reductions would be achieved from significant GHG sources.

In 2016, SB 32 amended the California Global Warming Solution Act. SB 32 and accompanying Executive Order B-30-15 require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. CARB updated its Climate Change Scoping Plan in December of 2017 (CARB 2017) to express the 2030 statewide target in terms of million metric tons of CO_2e ($MMTCO_2e$). The 2008 Climate Change Scoping Plan shows 1990 emissions at 426.6 $MMTCO_2e$ (CARB 2008). Based on the emissions reductions directed by SB 32, the annual 2030 statewide target emissions level for California is 260 $MMTCO_2e$. The 2017 Climate Change Scoping Plan identifies measures for how California could achieve the 2030 GHG reduction target established in SB 32,and substantially advance towards the 2050 reduction goal identified in EO S-3-05.

Cap-and-Trade Program

The California Cap-and-Trade Program is a core strategy that the state is using to meet its GHG reduction targets for 2020 and 2030, and ultimately achieve an 80 percent reduction from 1990 levels by 2050. CARB designed and adopted the California Cap-and-Trade Program to reduce GHG emissions from "covered entities" (e.g., electricity generation, petroleum refining, cement production, and large industrial facilities that emit more than 25,000 MTCO2e per year), setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve reductions. Under the Cap-and-Trade Program, an overall limit is established for GHG emissions from capped sectors. The statewide cap for GHG emissions from the capped sectors commenced in 2013. The cap declines over time. Facilities subject to the cap can trade permits to emit GHGs.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. Specifically, the law increases the percentage of energy that both investor-owned utilities and publicly-owned utilities must obtain from renewable sources(i.e., the renewables portfolio standard) from 50 percent to 60 percent by 2030. Incrementally, these energy providers must also have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027.

Senate Bill 375

Senate Bill 375 (SB 375), known as the *Sustainable Communities Strategy and Climate Protection Act*, was signed into law in September 2008. SB 375 builds upon AB 32 by requiring CARB to develop regional GHG reduction targets for automobile and light truck sectors for 2020 and 2035. The initial per-capita GHG emissions reduction targets for passenger vehicles in the San Francisco Bay Area included a seven percent reduction by 2020 and a 15 percent reduction by 2035. In 2018, CARB set updated targets for a 10 percent reduction by 2020 and a 19 percent reduction by 2035 (CARB 2018).

Senate Bill 1383 (Short-Lived Climate Pollutants)

SB 1383, enacted in 2016, requires statewide reductions in short-lived climate pollutants across various industry sectors. The climate pollutants covered under SB 1383 include methane, fluorinated gases, and black carbon—all GHGs with a much higher warming impact than CO2 and with the potential to have detrimental effects on human health. SB 1383 requires CARB to adopt a strategy to reduce methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The methane emissions reduction goals include a 75 percent reduction in the level of statewide disposal of organic waste from 2014 levels by 2025.

3.8.2.3 Regional

2017 Clean Air Plan

The BAAQMD prepared the 2017 Clean Air Plan to reduce air pollution, protect public health, and reduce GHG emissions (BAAQMD 2017b). The plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG reduction targets for 2030 and 2050, and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG reduction targets.

The 2017 Clean Air Plan includes control measures designed to reduce emissions of CH_4 and other super-GHGs that are potent climate pollutants in the near-term, and to decrease emissions of CO_2 by reducing fossil fuel combustion.

Plan Bay Area

Consistent with the requirements of SB 375, the Metropolitan Transportation Commission (MTC) partnered with the Association of Bay Area Governments (ABAG) to prepare Plan Bay Area 2050, the region's Sustainable Communities Strategy (SCS), as part of the Regional Transportation Plan process. However, the SCS would not be directly applicable to Sargent Quarry, because the reductions would be achieved through the promotion of compact, high-density, mixed-use neighborhoods near transit, and alternatives to single passenger vehicle use.

3.8.2.4 Local

County of Santa Clara General Plan

Section G of the Health Element of the Santa Clara County General Plan (County of Santa Clara 2015) addresses GHG and Climate Change. This element includes several GHG-related policies that pertain to this Project:

> ***Policy HE-G.3:*** Fleet upgrades. Promote Air District mobile source measures to reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment, and by expanding the use of zero emission and plug-in vehicles.
>
> ***Policy HE-G.4:*** Off-road sources. Encourage mobile source emission reduction from off-road equipment such as construction, farming, lawn and garden, and recreational vehicles by retrofitting, retiring and replacing equipment and by using alternate fuel vehicles.
>
> ***Policy HE-G.5:*** GHG reduction. Support efforts to reduce GHG emissions from mobile sources, such as reducing vehicle trips, vehicle use, vehicle miles traveled (VMT), vehicle idling, and traffic congestion. These efforts may include improved transit service, better roadway system efficiency, state-of-the-art signal timing and Intelligent Transportation Systems (ITS), transportation demand management, parking and roadway pricing strategies, and growth management measures.
>
> ***Policy HE-G.10:*** Conservation. Promote energy conservation and efficiency in homes, businesses, schools, and other infrastructure to reduce energy use and criteria pollutant and greenhouse gas emissions.
>
> ***Policy HE-G.11:*** Renewable energy. Encourage renewable energy, such as solar and wind turbines, on commercial, industrial, and residential buildings.
>
> ***Policy HE-G.12:*** Energy technologies. Support regional and local initiatives that promote integrated building systems, distributed generation, demand response programs, smart grid infrastructure, energy storage and backup, and electric transportation infrastructure.

3.8.3 Environmental Setting

3.8.3.1 U.S. Emissions

In 2018, the U.S. emitted about 6,677 $MMTCO_2e$, with 75.4 percent of those emissions coming from fossil fuel combustion. Of the major sectors nationwide, transportation accounts for the highest amount of GHG emissions (approximately 28 percent), followed by electricity (27 percent), industry (22 percent), commercial and residential buildings (12 percent), and agriculture

(10 percent). Between 1990 and 2018, total U.S. GHG emissions rose by 6 percent, but emissions have generally decreased since peaking in 2005. Since 1990, U.S. emissions have increased at an average annual rate of 0.2 percent (USEPA 2020).

3.8.3.2 California Greenhouse Gas Emissions Inventory

CARB compiles GHG inventories for the state. Based on the 2019 GHG inventory data (i.e., the latest year for which data are available from CARB), California emitted 418.2 $MMTCO_2e$, including emissions resulting from imported electrical power (CARB 2021a).

California has experienced both population and economic growth in the last 20 years, but GHG emissions have actually declined. Between 1990 and 2020, the population of California grew by approximately 10 million (from 29.8 to 39.8 million) (CDF 2020a). This represents an increase of approximately 34 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from $773 billion in 1990 to $3.14 trillion in 2019, representing an increase of approximately 306 percent (more than three times the 1990 gross state product) in today's dollars (CDF 2020b). Despite this growth, CARB's 2019 statewide inventory indicated that California's net GHG emissions in 2019 were below 1990 levels (i.e., 431 $MMTCO_2e$), which is the 2020 GHG reduction target codified pursuant to AB 32.

Table 3.8-1 identifies and quantifies statewide anthropogenic GHG emissions and non-anthropogenic sinks (e.g., carbon sequestration due to forest growth) in 1990 and 2019. As shown in the table, the transportation sector is the largest contributor to statewide GHG emissions at approximately 40 percent in 2019.

TABLE 3.8-1
STATE OF CALIFORNIA GREENHOUSE GAS EMISSIONS

Category	Total 1990 Emissions Using IPCC SAR ($MMTCO_2e$)	Percent of Total 1990 Emissions	Total 2019 Emissions Using IPCC AR4 ($MMTCO_2e$)	Percent of Total 2019 Emissions
Transportation	150.7	35%	166.1	40%
Electric Power	110.6	26%	58.8	14%
Commercial and Residential	44.1	10%	43.8	10%
Industrial	103.0	24%	88.2	21%
Recycling and Waste[a]	—	—	8.9	2%
High GWP/Non-Specified[b]	1.3	<1%	20.6	5%
Agriculture/Forestry	23.6	6%	31.8	8%
Forestry Sinks	-6.7	-2%	—[c]	—
Net Total (IPCC SAR)	**426.6**	**100%[e]**	**—**	**—**
Net Total (IPCC AR4)[d]	**431**	**100%[e]**	**418.2**	**100%**

NOTES:

AR4 = Fourth Assessment Report; GWP = global warming potential; IPCC = Intergovernmental Panel on Climate Change; MMTCO2e = million metric tons of carbon dioxide equivalents; SAR = Second Assessment Report

a. Included in other categories for the 1990 emissions inventory.
b. High GWP gases are not specifically called out in the 1990 emissions inventory.
c. Revised methods under development (not reported for 2019).
d. CARB revised the state's 1990-level greenhouse gas (GHG) emissions using GWPs from the IPCC AR4.
e. Total of individual percentages may not add up to 100% due to rounding.

SOURCES: CARB 2021a; CARB 2020.

3.8.3.3 Bay Area GHG Emissions

The BAAQMD 2017 Clean Air Plan presents GHG inventory data for the Bay Area compiled by BAAQMD. **Table 3.8-2** shows the Bay Area GHG inventory by source category, organized according to the economic sectors used in the AB 32 Scoping Plan Update. The four largest sectors—transportation, stationary sources, energy, and buildings— collectively account for 91 percent of the total inventory (BAAQMD 2017b).

TABLE 3.8-2
2015 BAY AREA GHG EMISSIONS (CO_2e PER YEAR)

Source Category	Total Emissions by Source (CO_2e)
Transportation	**35,420,000**
On-road	30,750,000
Off-road	4,670,000
Electricity/Co-Generation	**12,240,000**
Co-generation	5,880,000
Electricity generation	5,080,000
Electricity imports	1,280,000
Buildings	**9,270,000**
Residential fuel usage	5,450,000
Commercial fuel usage	3,820,000
Stationary Sources	**22,360,000**
Oil refineries	15,680,000
Natural gas combustion	4,980,000
Natural gas distribution*	460,000
Cement manufacturing	990,000
Fugitive and process emissions*	250,000
Waste Management	**2,300,000**
Landfills*	1,850,000
Composting/POTWs*	450,000
Fluorinated Gases	**3,560,000**
HFCs and PFCs (commercial, industrial, and transportation)*	3,470,000
SF_6 (electricity production and semiconductor manufacturing)*	90,000
Agriculture	**1,390,000**
Animal waste*	760,000
Soil management	280,000
Agricultural equipment	230,000
Biomass burning	120,000
TOTAL EMISSIONS (CO_2e)	**86,540,000**

NOTES:
* Significant source of super-GHGs.

POTWs = treatment of water and wastewater at publicly owned treatment works.
HFCs = hydrofluorocarbons.
PFCs = perfluorocarbons.

SOURCE: BAAQMD 2017b.

3.8.3.4 Project Site GHG Emissions

The majority of Sargent Ranch is undeveloped, and there are limited GHG-emitting activities at the Project site associated with cattle ranching (e.g., CH_4). As shown in Table 3.8-2, agricultural activities in the Bay Area region represent only 1.6 percent of total GHG emissions, and the cattle operation at the Project site would produce only a small portion of the overall agricultural emissions. For the purposes of a conservative analysis, it is assumed that the existing cattle ranching activities at the site would be moved to another area at Sargent Ranch, and therefore the associated emissions are not considered to be baseline emissions for the Project.

3.8.4 Impact Evaluation

3.8.4.1 Approach to the Analysis

The GHG assessment evaluates proposed mining and processing operations based on the quantity of processed aggregate proposed be exported from the quarry, processing equipment and processing rates, off-road mobile equipment for use in mining and processing, the number and types of quarry vehicles, and the operation schedule.

GHG emissions associated with the Project were calculated consistent with the methods identified for calculation of the air pollutants described in Section 3.3, Air Quality, using the CalEEMod, EMFAC2021, and OFFROAD Orion models. The following sources of GHG emissions were identified as part of the Project:

- On-site operation of mobile quarry mining equipment (bulldozers, excavators, loaders, scrapers);
- On-site vehicle travel (haul trucks);
- On-site operation of processing equipment (screens, washers, and conveyors);
- On-site emergency generator;
- Off-site vehicle travel (rail and haul truck transport and worker traffic); and
- Electricity usage, including on-site rock processing equipment.

For the Project, it is conservatively assumed that the proposed maximum throughput of 1,860,000 tons of sand and aggregate materials per year could be reached by 2024.[1] Therefore, to determine the significance of the increase in GHG emissions, the projected GHG emissions for 2024 are compared to the significance threshold.

Construction and operational activities were calculated separately. For the construction period, exhaust emissions were calculated from construction-related equipment and vehicles. The Project's total short-term construction emissions were amortized over the 30-year mining term to annualize the emissions. The emergency generator would be located on site to provide back-up power in the event of an electrical outage. No other stationary sources of combustion emissions are proposed.

[1] Emissions modeling was conducted assuming construction in 2022 and operations starting in 2023. This results in a conservative estimate of emissions, because emission rates decrease with future years due to improvements in engine and fuel technology plus retirement of older, dirtier engines from the fleet.

Vehicle Travel and Equipment Exhaust Emissions

GHG emissions from vehicle travel, both on- and off-site, along with equipment operation were computed using the same modeling techniques as conducted to estimate the criteria air pollutants. This methodology is described in detail under Impact 3.3-1 in Section 3.3, *Air Quality*.

Indirect Emissions from Electricity Usage

The processing plant and conveyo~~e~~r belts would use electric power to operate, so they would not directly emit GHG. The quarry processing facility would include numerous fixed equipment that would be powered by electricity such as washing, separation, and classification equipment, and screens, conveyors, and stacking conveyors. Electricity also would be used to power water pumps and to support the office. Operation of the quarry would require 1,250 megawatt-hours per year (Illingworth and Rodkin, Inc. 2021).

Indirect emissions of CO_2e would occur at the power plant(s) that would generate the electricity that would be consumed by the Project. Silicon Valley Clean Energy (SVCE) is the official electricity provider for Santa Clara County. SVCE purchases carbon-free electricity and partners with PG&E to deliver this electricity over existing power lines that they maintain. SVCE provides nearly 100-percent carbon-free energy (CAPCOA 2021), so CO2e emissions associated with electricity for the project operations would be negligible.

Significance Thresholds

On April 20, 2022, the BAAQMD adopted new CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans (BAAQMD 2022a). The revised CEQA thresholds are designed for “land use development” projects based on what will be required of such projects to achieve California’s long-term climate goal of carbon neutrality by 2045. The BAAQMD found that GHG emissions associated with new land use development projects would be considered to result in less-than-significant impacts if they incorporate design elements such as restricting natural gas usage and the wasteful, inefficient, or unnecessary energy usage at buildings; achieving VMT reductions for residential, office, and retail projects: and compliance with state off-street electric vehicle requirements (BAAQMD 2022b). These significance thresholds are not directly applicable to industrial quarry projects, such as the Project, and are therefore not used in this analysis.

The BAAQMD CEQA Air Quality Guidelines (BAAQMD 2017a) identifies GHG significance thresholds for operation of stationary source projects and for operation of land use development projects that do not include stationary sources. The Project processing plant and generator would be subject to BAAQMD permitting requirements for stationary sources. The threshold for stationary sources is 10,000 metric tons CO_2e per year, but this threshold is not applicable because the Project would include both stationary and mobile sources of GHG emissions. Following are the three thresholds of significance options for GHG emissions of land use development projects: 1) compliance with a qualified GHG reduction strategy; 2) 1,100 metric tons CO_2e per year; or 3) 4.6 metric tons CO_2e per service population (residents + employees) per year.

The first threshold is not applicable because the County has not adopted a qualified GHG reduction strategy. Similar to the BAAQMD's new significance thresholds, the second and third thresholds of significance, which were primarily developed by the BAAQMD for residential, office, or mixed-use projects in urban infill locations, are not directly applicable to the Project because it would be an industrial use located in a rural unincorporated area. In addition, these significance thresholds were designed for the BAAQMD to meet the AB 32 goal of reducing GHG emissions to 1990 levels by 2020, and BAAQMD has not updated its significance thresholds to be consistent with the more recently adopted SB 32 target of reducing statewide GHG emissions to 40 percent below 1990 levels by 2030.

In the absence of an updated mass emissions threshold for industrial uses in rural areas that is applicable to the Project and consistent with the targets established by SB 32, this EIR in Impact 3.8-1 considers any net increase in Project-related GHG emissions to be significant.

3.8.4.2 Significance Criteria

The Project would result in 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; or

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

3.8.4.3 Project Impacts

Impact 3.8-1: The Project would generate greenhouse gas emissions directly and indirectly, contributing to global climate change. (Less than Significant with Mitigation)

This impact addresses Significance Criterion (a).

All Components

Table 3.8-3 reports the estimated amortized construction GHG emissions and operations emissions for the Project assuming the first year of maximum quarry throughput operations. The Project would cause an increase in GHG emissions of 7,408 metric tons CO_2e annually. These emissions include construction emissions amortized over the proposed 30-year mining period. Emissions would decrease in subsequent years due to a reduction in tailpipe emissions from on-road mobile sources in the future, and because not every year would be a maximum throughput year. The majority, or 65 percent, of the emissions would be associated with off-site truck travel, followed by 30 percent that would be associated with on-site off-road equipment. The GHG estimates are based on the emission calculations provided in Appendix D. The resulting emissions are greater than the significance threshold value of zero, so the impact would be **significant**.

TABLE 3.8-3
PROJECT ANNUAL GHG EMISSIONS

Emission Source	2024 CO2e (tons/year)
Amortized construction emissions	8
Off-road equipment exhaust (dozers, loader, graders, and scrapers)	2,266
On-site quarry vehicle exhaust (service trucks, pickup trucks, and water trucks)	116
Rail emissions	288
Off-site vehicle emissions (haul truck and employee vehicles)	4,730
Electricity consumption[1]	~1
Total[2]	7,408
Threshold	**No net increase**
Above Threshold	**Yes**

NOTES:
1. Based on assumption that the Project would use electricity that is nearly carbon-free supplied by SVCE.
2. Numbers may not add exactly due to rounding.

SOURCE: Illingworth and Rodkin, Inc. 2021.

Mitigation Measure 3.8-1a: Prior to the commencement of the construction activities, the Applicant shall purchase offset credits in the amount of 7,408 metric tons CO_2e. This amount represents amortized construction emissions plus estimated first year operational emissions. The Applicant shall provide verification to the County that carbon offset credits have been purchased.

The Applicant shall prioritize offsets within Santa Clara County, BAAQMD boundaries, the rest of California, and from other states with offset laws at least as strict as California's, in order of preference. The carbon offset credits shall be real, permanent, quantifiable, verifiable, additional, and enforceable, as defined by 17 CCR 95802. Offset protocols must also be consistent with CARB requirements under 17 CR 95972. Carbon offsets must meet these requirements and be purchased from offset programs verified by a recognized third-party registry such as the American Carbon Registry, Verra, or Climate Action Reserve. For each subsequent year of Project operations, the Applicant shall choose one of the following options.

- ***Option 1*:** The Applicant shall continue to make the offset payment each subsequent year in the complete amount of 7,408 metric tons CO_2e.
- ***Option 2*:** The Applicant shall purchase offset credits in the amount of 7,408 metric tons CO_2e minus the difference between 7,408 metric tons and the actual CO_2e emissions that the project generated in the prior year. Based on actual Project construction and/or subsequent year operational activities that resulted in GHG emissions, the Applicant shall calculate annual GHG emissions, including consideration of any measures that have been taken to reduce project GHG emissions, and provide emissions estimates to the County for review and approval. Within 60 days of County approval of the estimated emissions, the Applicant shall provide verification to the County that carbon offset credits have been purchased for the amount identified by the County-approved emissions estimates.

Mitigation Measure 3.8-1b: For construction and operational off-road equipment, the Applicant shall replace diesel and gasoline-powered vehicles with electric or other low or zero-GHG emissions equipment as feasible, based on availability of the technology and whether the cost would be prohibitive. In addition, biodiesel or renewable diesel shall replace traditional petroleum-based diesel to fuel off-road equipment where feasible, based on availability of the technology and whether the cost would be prohibitive. Any resulting changes to the Project fleet or fuel type shall be reflected in the calculations of GHG emissions for Option #2 of Mitigation Measure 3.8-1a. Prior to the commencement of construction activities, and every five years afterward, the Applicant shall provide the County with a report for County review and approval describing the feasibility of using low carbon-emitting equipment and fuels for the Project.

Mitigation Measure 3.8-1c: If and when electric haul trucks are used for product hauling associated with the Project, the Applicant shall install conduit and EV charging stations at locations where trucks will be parked or idling. The Applicant shall notify the County when installation of conduit and EV charging stations is completed, following which the County shall verify installation. Any resulting changes to the Project fleet shall be reflected in the calculations of GHG emissions for Options #2 in Mitigation Measure 3.8-1a. This mitigation measure will also reduce future NOx emissions from trips to the site.

Significance after Mitigation: Less than significant.

Implementation of Mitigation Measures 3.8-1a through 3.8-1c would reduce the significant impact to a less-than-significant level. Specifically, pursuant to Mitigation Measure 3.8-1a, the Applicant would be required to purchase carbon credits to offset GHG emissions associated with the Project to achieve the net zero significance threshold, taking into account the implementation of Mitigation Measures 3.8-1b and 3.8-1c.

Impact 3.8-2: The Project could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. (Less than Significant with Mitigation)

This impact addresses Significance Criterion (b).

All Components

The Project would emit GHGs in the amount shown in Table 3.8-3. Because it would increase GHG emissions, the Project would impede the state's efforts to achieve the GHG reductions needed to comply with the SB 32, the CARB 2017 GHG Scoping Plan, and Executive Order B-55-18. As such, the impact would be **significant**.

Mitigation: Implement Mitigation Measures 3.8-1a through 3.8-1d.

Significance after Mitigation: Less than significant.

Mitigation Measures 3.8-1a through 3.8-1d would reduce the GHG emissions associated with the Project to zero. This would not conflict with the SB 32 reduction goal for 2030, CARB 2017 GHG Scoping Plan, or Executive Order B-55-18. Therefore, as mitigated, the Project would not conflict with plans, policies, or regulations to reduce GHG emissions.

3.8.4.4 Cumulative Analysis

Although the geographical extent of GHG emissions and climate change is global, as climate change is caused by GHGs emitted into the atmosphere around the world from a variety of sources, the analysis in this EIR focuses on GHG emissions within California to evaluate the significance of the Project's contribution. In the CEQA context, because an individual project could not alter the climate, a project's GHG emissions are inherently cumulative because they contribute to significant statewide cumulative GHG emissions. Because they exceed significance thresholds, Impacts 3.8-1 and 3.8-2 are also cumulatively considerable, but would be reduced to less-than—cumulatively considerable and less-than-significant levels by Mitigation Measures 3.8-1a through 3.8-1d.

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3.9 Hazards and Hazardous Materials

3.9.1 Introduction

This section identifies and evaluates the hazards and hazardous materials impacts that could result from implementation of the Project. Hazards evaluated in this section include potential soil contamination due to historic pesticide use, hazardous materials transportation, storage and use during construction and operation of the Project. Hazardous materials are substances or materials that could adversely affect the safety of the public, handlers, carriers, or environmental media (such as air, soils, or water) and can include materials used in manufacturing, mining, construction and related activities, as well as common office products such as cleaning products or insecticides. Hazardous waste is waste (typically a hazardous material that is discarded or a by-product of manufacturing processes) that is potentially harmful to human health or the environment, and can be liquid, solid, gas, or sludge.

A Phase I Environmental Site Assessment was prepared for the Project site (Appendix H). Issues related to wildfire hazards are addressed in Section 3.15, *Wildfire*.

3.9.2 Regulatory Setting

3.9.2.1 Federal

Hazardous Materials Management

The primary federal agencies with responsibility for hazardous materials management include the U.S. Environmental Protection Agency (USEPA), U.S. Department of Labor Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (USDOT). State and local agencies often have either parallel or more stringent regulations than these federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated.

Hazardous Materials Transportation

The USDOT regulates hazardous materials transportation on all interstate roads pursuant to its authority under the Hazardous Materials Transportation Uniform Safety Act (49 U.S.C. Section 5101 et seq.). The purpose of the Act is to "protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce" (49 U.S.C. Section 5101). Within California, the state agencies with primary responsibility for enforcing federal and state regulations and for responding to transportation emergencies are the California Highway Patrol (CHP) and California Department of Transportation (Caltrans). Together, federal and state agencies determine driver-training requirements, load labeling procedures, and container specifications. Although special requirements apply to transporting hazardous materials, requirements for transporting hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.

Clean Air Act

Regulations under the Clean Air Act are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store minimum quantities (called threshold quantities) or greater of listed regulated substances to develop a Risk Management Plan, including hazard assessments and response programs to prevent accidental releases of listed chemicals.

Oil Pollution Prevention

Part 112 of Subchapter D of Chapter I of Title 40 of the Federal Code of Regulations (40 CFR Section 112) establishes procedures, methods, equipment, and other requirements to prevent discharges from non-transportation-related onshore and offshore facilities into or upon the navigable waters of the United States or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States. These regulations require facilities with a single tank or cumulative aboveground storage capacities of 1,320 gallons or greater of petroleum to prepare and implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan (40 CFR Section 112.1). The purpose of an SPCC Plan is to form a comprehensive federal/state spill prevention program that minimizes the potential for discharges. The SPCC Plan must address all relevant spill prevention, control, and countermeasures necessary at the specific facility for which the SPCC Plan is written.

Comprehensive Environmental Response and Liability Act and Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) amends the Comprehensive Environmental Response and Liability Act (CERCLA) and governs hazardous substances. The applicable part of SARA for the Project is Title III, otherwise known as the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA). EPCRA establishes requirements for federal, state, and local governments, as well as Indian Tribes and industry members regarding emergency planning and reporting on hazardous and toxic chemicals (USEPA 2021). Key sections of the law include:

> **Section 304:** Requires immediate notification to the local emergency planning committee (LEPC) and the state emergency response commission (SERC) when a hazardous material is released in excess of its reportable quantity (RQ). If a CERCLA-listed hazardous substance RQ is released, notification must also be given to the National Response Center in Washington, D.C. (RQs are listed in 40 CFR Part 302, Table 302.4). These notifications are in addition to notifications given to the local emergency response team or fire personnel.

> **Section 311:** Requires that either material safety data sheets (MSDSs) for all hazardous materials or a list of all hazardous materials be submitted to the SERC, LEPC, and local fire department.

Toxic Substances Control Act, Resource Conservation and Recovery Act

The Federal Toxic Substances Control Act of 1976 and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), amended in 1996, authorizes the USEPA to register or license pesticides (including herbicides) for use in the United States. Pesticides must be registered both with the USEPA and the state before distribution. If any pesticides are used on the Project site, their use must comply with applicable federal requirements. Under the FIFRA, the California Department of Pesticide Regulation (CDPR) is vested with primary responsibility to enforce pesticide laws and regulations in California. Pesticide rules are found in different sections of California codes and regulations, including the Food and Agriculture Code, Business and Professions Code, Health and Safety Code, and Labor Code. In general, the CDPR regulates pesticide sales and use statewide, while local use is enforced through the County Agricultural Commissioners. The County's Integrated Pest Management Division monitors pesticide applications to ensure they are performed in a safe and effective manner and that worker safety requirements are followed; inspects application equipment, pesticide storage sites, employee training documents and business pesticide use records; and investigates complaints and pesticide-related illnesses.

Occupational Safety

OSHA is responsible for assuring worker safety in the handling and use of chemicals in the workplace. The federal regulations pertaining to worker safety are contained in Title 29 of the Code of Federal Regulations, as authorized in the Occupational Safety and Health Act of 1970. They provide standards for safe workplaces and work practices, including standards relating to hazardous materials handling. At sites known or suspected to have soil or groundwater contamination, construction workers must receive training in hazardous materials operations and a site health and safety plan must be prepared. The health and safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

3.9.2.2 State

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

In January 1996, the California Environmental Protection Agency (Cal EPA) adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program, Health & Safety Code Section 25404 et seq.) The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program. The County's Hazardous Materials Compliance Division is the designated CUPA for all businesses (County of Santa Clara 2021a).

Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law (Business Plan Act, Health and Safety Code Section 25500 et seq.) requires any business that handles hazardous materials at or above specified thresholds to prepare a hazardous materials business plan (HMBP). The HMBP must include the following:

- Details, including floor plans, of the facility and business conducted at the site
- An inventory of hazardous materials that are handled or stored on site
- An emergency response plan
- A safety and emergency response training program for new employees with annual refresher courses

The primary purpose of the HMBP requirements is to provide basic information needed by first responders to prevent or mitigate damage to the public health and safety and to the environment from a release or threatened release of a hazardous material (Cal OES 2014).

Hazardous Waste Handling

The Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely.

Individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In California, the DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. The California Hazardous Waste Control Law is codified at Health and Safety Code Section 25100 et seq.

Occupational Safety

The California Department of Industrial Relations Division of Occupational Safety and Health (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the Code of Federal Regulations.

Cal/OSHA regulations concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances and their handling. The hazard communication program also requires that safety data sheets (SDSs) be available to employees, and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and training in emergency evacuation).

Other State Regulations

The California Code of Regulations contains additional requirements that would apply to the Project, including:

- 8 Cal. Code Regs. Section 2700 et seq., High Voltage Electrical Safety Orders, which establish essential requirements and minimum standards for installation, operation, and maintenance of electrical equipment to provide practical safety and freedom from danger.
- 22 Cal. Code Regs. Section 66273 Standards for Universal Waste Management, which regulate the management of universal wastes. These wastes are not fully regulated as hazardous waste in order to encourage their recycling. Batteries, electronic devices, mercury-containing equipment, lamps, cathode ray tubes and tube glass, and aerosol cans are considered universal wastes in California. A person or business who generates universal waste is required to follow the Management Requirements for Universal Waste Handlers (22 Cal Code Regs. Sections 66273.30–66273.39), which include storage, spill protection, and disposal rules designed to minimize risk of harm to public health and the environment.

NPDES Construction General Permit and Industrial General Permit

The Regional Water Quality Control Board (RWQCB) administers the stormwater permitting program in the Central Valley Region pursuant to authority delegated under the federal Clean Water Act’s National Pollutant Discharge Elimination System (NPDES) program. The required Stormwater Pollution Prevention Plan (SWPPP) (for construction) and Industrial SWPPP (for operation) include best management practices (BMPs) to minimize discharges of pollutants in stormwater runoff. The Construction General Permit and Industrial General Permit are described in detail in Section 3.10, *Hydrology and Water Quality*.

California Fire Code and California Building Code

The California Fire Code is contained within Title 24, Chapter 9 of the California Code of Regulations. Based on the International Fire Code, the California Fire Code is created by the California Buildings Standards Commission and regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. Similar to the International Fire Code, the California Fire Code and the California Building Code (CBC) use a hazards classification system to determine the appropriate measures to incorporate to protect life and property.

Emergency Response

The Cal OES developed the State of California Emergency Plan (Cal OES 2017) to coordinate federal, state, local, and private agency emergency service providers' response to natural or human-caused emergencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the Cal OES, which coordinates the responses of other agencies.

3.9.2.3 Local

Santa Clara County General Plan

The Santa Clara County General Plan Safety and Noise element contains the following planning strategies, policies, and implementation recommendations regarding hazardous materials and waste:

> **Strategy #1:** Manage Hazardous Materials Safely and Efficiently - By adhering to adopted building and development standards (i.e., Uniform Fire Code, Uniform Building Code, Hazardous Materials Management Plan), the County and cities can ensure that new development is designed and maintained in a manner that will shield or distance people and the environment from dangerous materials and activities.
>
> > ***Policy C-HS 14:*** All feasible measures to safely and effectively manage hazardous materials and site hazardous materials treatment facilities should be used, including complying with all federal and state mandates.
> >
> > ***Policy C-HS 15:*** To achieve a more effective, efficient and economical regulatory environment, all feasible means to simplify and coordinate locally implemented hazardous materials management regulations should be considered.
> >
> > > *Implementation Recommendation C-HS(i) 6:* Comply with all federal- and state-mandated hazardous materials planning and regulatory measures.
>
> **Strategy #2:** Ensure the Adequacy of Local Hazardous Waste Treatment Facilities - Where the use of hazardous materials is deemed necessary and appropriate, the County and cities should enforce reliance upon safe and cost-effective procedures. Through adoption and enforcement of the County Hazardous Waste Management Plan and other mandated hazardous materials programs, the County and cities can also ensure the safety, availability and adequacy of local hazardous waste treatment and disposal facilities.
>
> > ***Policy C-HS 15.2:*** The cities and Santa Clara County shall ensure that all relevant discretionary land use and development decisions: a. are consistent with the intent and provisions of the Countywide Hazardous Waste Management Plan (CHWMP), especially the facilities siting map and criteria, which identify potentially suitable areas for siting needed waste management facilities; and, b. do not unnecessarily limit the availability of sites suitable for potential hazardous waste management facilities, as identified in the CHWMP facilities siting criteria and map.

Santa Clara County Hazardous Materials Compliance Division

The Hazardous Materials Compliance Division oversees the storage of hazardous materials per the County's Hazardous Materials Storage Ordinance, which includes several provisions to ensure the protection of the public health and the environment. The Hazardous Materials

Compliance Division is the CUPA for the County and is responsible for administering the following six programs into a consolidated enforcement program:

- Hazardous Waste Generator Program
- Tiered Permitting Program
- Hazardous Materials Business Plan (HMBP)
- Aboveground Petroleum Storage Act (APSA) Program
- Underground Storage Tank Program (UST)
- California Accidental Release Program (CalARP)

Santa Clara County Operational Area Emergency Operations Plan

The Santa Clara County Operational Area Emergency Operations Plan (EOP) is an all-hazards document describing the County's Emergency Operations organization, compliance with relevant legal statutes, other guidelines, and critical components of the Emergency Response System. The EOP is activated during extraordinary emergency situations associated with large-scale disasters affecting Santa Clara County and is not intended to address specific emergency responses (County of Santa Clara 2008).

The EOP establishes the overall operational concepts associated with the management of incidents, emergencies, crises, disasters, and catastrophes at the County level. It is applicable to a wide variety of anticipated incident events including earthquake, wildland fires, floods, and public health issues and facilitates multiagency and multi-jurisdictional coordination during emergency operations. There are several separately published annexes that support this EOP. These supporting annexes further describe the operational or functional response to particular threats and hazards and the basic considerations, actions, and responsibilities of specific emergency response and management disciplines or functions.

3.9.3 Environmental Setting

3.9.3.1 Hazardous Materials and Waste

Hazardous waste handlers and generators in the County include industries, businesses, public and private institutions, and residences. Agricultural land use can also involve the storage and handling of hazardous materials and wastes including for the application of pesticides and the storage and use of fuels. Gasoline stations and other facilities that use or store fuels, solvents, chemicals or other hazardous materials represent other potential sources of hazardous materials in rural areas. The presence of these potential sources of hazardous materials, if encountered, can result in adverse environmental and health effects depending on the extent of exposure.

Definition of Hazardous Materials

A hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (Health and Safety

Code Section 25501(o)). The term “hazardous materials” refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases).

In some cases, past industrial or commercial activities on a site have resulted in spills or leaks of hazardous materials or wastes to the subsurface, resulting in soil and/or groundwater contamination. Depending on the type and concentrations of contamination, potential exposure can threaten public health if released from the soil, groundwater, or into the air. The four primary exposure pathways through which an individual can be exposed to a hazardous material or waste are inhalation, ingestion, bodily contact, and injection. Exposure can result from an accidental release of hazardous materials during transport, storage, or handling. Disturbance of contaminated subsurface soil during construction also can cause exposures to workers, the public, or the environment through excavating, stockpiling, handling, or transport of such soils.

Soil and Groundwater Contamination

In California, regulatory databases listing hazardous materials sites provided by numerous federal, state, and local agencies are consolidated in the “Cortese List” pursuant to Government Code Section 65962.5, effective in 1992. However, subsequent changes in web-based information availability since that time have made a consolidation of this list no longer necessary and the databases are maintained on an individual basis by the following responsible agencies:

- List of Hazardous Waste and Substances sites from Department of Toxic Substances Control (DTSC) EnviroStor database
- List of Leaking Underground Storage Tank Sites by County and Fiscal Year from the State Water Resources Control Board (SWRCB) GeoTracker database
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit
- List of “active” Cease and Desist Order and Cleanup and Abatement Order from the SWRCB
- List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC and listed on their EnviroStor database

These five databases identify sites with suspected and confirmed releases of hazardous materials to the subsurface soil and/or groundwater. The SWRCB GeoTracker database includes leaking underground storage tanks (LUSTs), permitted underground storage tanks (USTs), Department of Defense sites, and Cleanup Program sites. The DTSC EnviroStor database includes federal and state response sites; voluntary, school, and military cleanups and corrective actions; and permitted sites. The reporting and statuses of these sites change as identification, monitoring, and cleanup of hazardous materials sites progress. Typically, a listed site is considered no longer to be of concern once it has been demonstrated that existing site uses combined with the levels of identified contamination present no significant risk to human health or the environment and the case is closed by the overseeing agency.

According to a review of the GeoTracker database, the Project site is not included as an active LUST site or a Cleanup Program site, nor are there any open cases within 1 mile of the Project site (SWRCB 2021). The nearest LUST and cleanup sites are located just over 1 mile north and south of the Project site; both are closed cases. Accordingly, the Project site is unlikely to have been adversely affected by migration of hazardous materials through groundwater from these sites.

CalGEM indicates that there are several oil and gas wells located near the Project site with the closest well located approximately 400 feet away. These wells were drilled by the Sargent Oil Company and are plugged and abandoned (CalGEM 2021). The Phase I Environmental Site Assessment (included as Appendix H) recommends coordination of Project activities with the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources.

Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment was prepared for the Project site (Appendix H). The purpose of the investigation was to identify any known or suspected areas of hazardous materials or wastes that may be present beneath, on, or within proximity to the Project site. The Phase I Environmental Site Assessment identified recognized environmental conditions (RECs), including the abandoned oil and gas wells described above, and the potential for soil adjacent to structures that are painted with lead-containing paint to contain lead as a result of the weathering and/or peeling of painted surfaces. There is an existing ranch house on the north side of Tar Creek, near the Old Monterey Road undercrossing. This house would not be altered by the Project. The Phase I Environmental Site Assessment refers to a house that had been demolished, but it was located outside of the Project site. Soil near wood framed structures also can be impacted by pesticides historically used to control termites, and pesticides may also have been used at livestock management areas including the on-site corral area located at the northeast portion of the Project site. There is a potential that residual lead and pesticide concentrations could remain in on-site soil. The Phase I Environmental Site Assessment includes recommendations for several of the RECs identified; to the extent that these recommendations address conditions that could affect or be affected by the Project, this EIR considers and incorporates them as appropriate. Several recommendations address off-site conditions and are not included here.

3.9.4 Impact Evaluation

3.9.4.1 Approach to the Analysis

The impact analysis for hazards and hazardous materials involved reviewing the hazards databases described in Section 3.9.3, *Environmental Setting*, the Phase I Environmental Site Assessment (Appendix H), and the Sargent Quarry Mining and Reclamation Plan (Appendix B) to identify existing and potential Project-related sources of hazards and hazardous materials. The analysis also assessed the potential for accidental releases of existing or proposed hazardous materials into the environment.

3.9.4.2 Significance Criteria

A project would result in significant impacts 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 it 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, would the project result in a safety hazard or excessive noise for people residing or working in the project area; or

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The environmental checklist included in CEQA Guidelines Appendix G further suggests that a project would result in significant impacts related to hazards and hazardous materials if it would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Impacts relating to wildfire are addressed in Section 3.15, *Wildfire*.

Due to the nature of the Project, the following criteria are not analyzed in this section for the reasons described below:

- ***Emit hazardous emissions or handle hazardous substances or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.*** The Project is not located within 0.25 miles of an existing or proposed school. The closest schools are the Aromas-San Juan School located approximately 0.9 miles southeast, and Anzar High School located approximately 1.3 miles away. Under this criterion, there would be no impact.
- ***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, create a significant hazard to the public or the environment.*** The Project is not proposed on a site included on a list of hazardous materials sites pursuant to Government Code Section 65962.5. According to the Phase I Environmental Site Assessment prepared for the Project site (Appendix H) and a recent review of publicly available environmental databases, the Project site is not listed as a hazardous materials site (SWRCB 2021; DTSC 2021). Therefore, the Project would cause no impact with respect to this criterion.
- ***Be located within an airport land use plan or within 2 miles of a public airport or a public use airport, and so result in a safety hazard or excessive noise for people residing or***

working in the project area. The Project would not be located within an airport land use plan and is located approximately 5 miles from the nearest private airport (the Frazier Lake Airport). Therefore, the Project is not part of any airport land use plan and would not interfere with airport operations or result in a safety hazard for people residing or working in the area: no impact would result with respect to this criterion.

- ***Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.*** The Project would not impair implementation of or physically interfere with the County Emergency Operations Plan which was adopted by the County Board of Supervisors on March 18, 2008 (County of Santa Clara 2008). The Project site and surrounding areas are largely undeveloped and located entirely on private property that is not designated in the County's Emergency Operations Plan for use in emergency response or evacuation. To facilitate truck access, an existing U.S. 101 on-ramp east of the Project site would be improved and would be built according to Caltrans specifications. In addition, the northern portion of Old Monterey Road within a County right-of-way, would be improved as needed with new pavement overlaid on the existing roadway. Although the Project would alter some existing road networks, these roads would not interfere with any identified evacuation route, restrict access for emergency response vehicles, or restrict access to critical facilities such as hospitals or fire stations. Consequently, the Project would cause no impact related to this criterion.

3.9.4.3 Project Impacts

Impact 3.9-1: The Project would routinely transport, use, and dispose of hazardous materials, which could pose a risk to human health and/or the environment. (Less than Significant)

This impact discussion corresponds to Significance Criteria (a) and (b) and focuses on the transport, use, and disposal of Project-related hazardous materials and the potential for accidental releases of those materials.

Construction

All Project Components

During construction, diesel and gasoline fuels and other hazardous materials such as such as hydraulic fluid, fuel, insulation oil, grease, lubricants, paints, solvents, and adhesives commonly associated with construction activities and equipment may be used and stored on site. Generally, the quantities of these hazardous materials would be relatively limited and handled in accordance with manufacturer's guidelines. These materials would be stored and handled in a manner to prevent accidental release, consistent with the SPCC Plan and measures contained within the required SWPPP (Appendix I). For example, the Project's SWPPP requires that such materials be stored within containers with secondary containment, such that spills from storage containers would be prevented from release into the environment. Further discussion of BMP requirements is provided in Section 3.10, *Hydrology and Water Quality*. SDSs for all applicable materials present at the site would be made readily available to on-site personnel. Any accidental spills would be contained and cleaned up immediately as specified in the SPCC Plan and the HMBP, which would ensure that any spills are rectified before they could become a hazard to the human health or the environment.

Solid waste from packaging and ranch-related items (e.g., barbed wire) found on site would also be disposed of during construction. Most of the waste would be non-hazardous and would be disposed of or recycled in accordance with state and local requirements, as described further in Section 3.14, *Utilities and Service Systems*. Any hazardous materials that are produced as a result of Project construction, such as during maintenance of heavy equipment, would be collected and transported away from the site, as required by the California Hazardous Waste Control Law. Sanitary waste would be managed using portable toilets and hauled for off-site disposal until construction of the septic system is completed.

With these protections in place, the public and the environment would be protected from exposure to hazardous materials during their routine transport, use, and disposal. The impact during construction would be **less than significant**.

Operation

Mining Pits, Conveyor Belts, and Processing Plant

Mining would require limited use of hazardous materials, including standard fuels, oils, and lubricants for excavation, grading, and hauling equipment. The conveyor belts would be electric, so they would not use any fuel, but could require some hazardous materials for maintenance (e.g., solvents or lubricants). The Project would require occasional deliveries of fuel and cleaning supplies and the use and storage of various hazardous materials, including acetylene gas, antifreeze (ethylene glycol), diesel fuel, flocculants (powder and liquid), gear oil, high-pressure grease, hydraulic fluid, motor oils, oxygen gas, turbine oil, and absorbents (for spill containment and cleanup). In addition, herbicides could be used for weed control and/or to maintain FMZs. Hazardous wastes used during operation would be removed from the site in accordance with hazardous waste handling and disposal requirements, including sanitary waste from the proposed septic system and portable toilets, used absorbents, and waste oil and filters. Fuels, oils, and any other hazardous materials that would be used would be stored on site in designated areas. The Project site would be fenced and gated, so the public would not be able to access areas where hazardous materials stored or used. In addition, a three-strand barbed wire fence would be placed along the perimeter of the mining area and inspected monthly to ensure any breaks would be repaired immediately.

Fuels and oils for mobile equipment would be used and stored within the processing plant area in aboveground storage tanks (ASTs) with fuel delivered on an as-needed basis. Fueling of vehicles and equipment would occur at the aboveground fuel dispensing facility located near the quarry offices. Other materials, including new oil and waste oil, antifreeze, and hydraulic fluids would also be stored in ASTs and smaller containers at designated storage sites within the processing plant area. All tanks would be compliant with State regulations and contain secondary containment or be double-walled ASTs to ensure any spills or leaks are contained. All materials delivered to the Project site would be in approved USDOT packaging and all commercial vehicles transporting hazardous materials to the Project site would be required to have the proper USDOT hazardous materials placards.

All storage and handling of hazardous materials would comply with federal, state, and local requirements to minimize inadvertent contamination of groundwater and accidental spillage into open water bodies. Accidents or mechanical failure involving heavy equipment or leaks and spills from storage tanks could result in the accidental release of small quantities of fuel, lubricants, hydraulic fluid, or other hazardous substances. The Project includes a HMBP as required by law, and an Industrial SWPPP (Appendix I) to minimize the potential for spills and leaks from material handling and storage, along with minimizing exposure of significant materials to stormwater (as described in Section 3.10, *Hydrology and Water Quality*). Requirements include secondary containment or using double-walled ASTs, conducting regular inspections, and training employees to ensure proper handling, storage, transport, and disposal techniques and methods are implemented. Moving parts, such as motors associated with conveyor belt equipment, would be serviced on a regular basis, and unscheduled maintenance would be conducted as necessary. Adherence to the HMBP as would further ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to workers or the public.

In addition, a SWPPP was completed to cover proposed operations on the site (see Appendix I). The SWPPP will include provisions to prevent the potential discharge of pollutants caused by equipment operation, material storage, and fueling as well as a description of containment controls and site-specific erosion and sediment control criteria. The SWPPP would include protective measures that would be implemented in the Project site, such as good housekeeping practices to maintain a clean and orderly facility, preventative maintenance such as regular inspection and maintenance of equipment, spill cleanup procedures, proper material handling and waste management including keeping hazardous material and waste containers closed when not in use, any major rebuilding of heavy equipment is completed off site, and ensure that all employees are provided adequate training to implement compliance activities. The SWPPP requires maintenance of records to document compliance. See Section 3.10, *Hydrology and Water Quality*, for further discussion of the SWPPP and protection of surface water resources. Because the Applicant and its contractors would be required to comply with the SWPPP and BMPs, the potential for an accidental release that could result in substantial harm to the public or environment would be minimized, and if such an accident did occur, would ensure that public health and the environment are protected from harm. This impact would be **less than significant**.

Access Roads, Rail Spur, and Road Improvements

The physical components of the access roads, road improvements, and rail spur would only result in the use of hazardous materials during necessary maintenance, including resurfacing, throughout the life of the Project. The roads would be used to transport hazardous materials to the Project site for the uses described above, and to transport hazardous wastes away from the Project site for proper disposal. Oil and chemical vendors, equipment operators, and waste haulers would be required to comply with the on-site speed limit and instructed to exercise caution when driving near ASTs and associated equipment as required by law. Drivers would be instructed to respond to an emergency by shutting off the pump or closing the emergency shutoff valve at the delivery truck product compartment. A spill containment kit would be located on employee vehicles and trains arriving at the site. If a spill occurs, employees would use absorbent material from these kits to prevent chemicals or oils from leaving the area. For larger spills, the on-site earthmoving equipment would be used to create a berm to contain the spill so that it can be cleaned up consistent with regulatory requirements.

Herbicides could be used for weed control and to maintain FMZs. All herbicide application and disposal would be conducted in accordance with applicable State and federal regulations that minimize health and safety risks.

With adherence to applicable regulatory requirements, impacts would be **less than significant**.

Reclamation

Quarry equipment, structures associated with the processing plant, and storage yard debris would be removed when the mining operation ceases. All remaining fuel, oil, and lubricants removed from equipment and any remaining fuel in the storage tanks would be transferred to an appropriate container and disposed of in accordance with the manufacturers' specifications and consistent with applicable regulatory requirements.

Revegetation would require weed control to reduce the occurrence of non-native plants that may invade the revegetated areas; methods would include mowing, removal by hand, herbicide use and/or with managed grazing. Any herbicide use would comply with applicable laws and regulations, which would minimize the risk of accident or exposure

When reclamation activities conclude, fuel tanks and other hazardous materials containers would be transported by licensed haulers to an approved disposal or recycling facility in accordance with laws and regulations. For example, prior to closure of any AST used to hold hazardous material, the Applicant would be required to obtain a tank closure permit from the County Department of Environmental Health and follow its tank closure guidelines (County of Santa Clara 2021a). Guidelines outline appropriate tank cleaning methods and methods to make tanks previously containing flammable materials safe for removal. Tank removal must be witnessed by a representative of the County Hazardous Materials Compliance Division, who may determine that soil sampling is required. In addition, a closure application for aboveground hazardous materials storage facilities may be required. Adherence to state and local regulations would reduce the potential for releases due to transportation and disposal of hazardous materials and would require soil investigation and remediation if indications of hazardous materials releases were observed.

Since routine inspections and ongoing maintenance of on-site equipment would be implemented to ensure equipment integrity is maintained, and because the Applicant and its contractors would be required to comply with all hazardous materials laws and regulations for the transport, storage, use, and disposal of hazardous materials, the potential to create a substantial hazard to the public or the environment would be **less than significant**.

Summary

Adherence to applicable laws and regulations, and implementation of the SWPPP, would ensure that all handling, storage, and disposal of hazardous materials would during all components of Project construction and operation would be conducted in accordance with proven practices to minimize exposure to workers or the public.

Mitigation: None required.

Significance after Mitigation: Less than significant.

Impact 3.9-2: The Project could create a hazard to the public or the environment through accidental release of existing soil contaminants, such as historic pesticide residues, into the environment. (Less than Significant with Mitigation*)*

This impact discussion corresponds to Significance Criterion (b) and focuses on the potential for accidental releases of existing sources of contamination on the Project site.

Construction

The Phase I Environmental Site Assessment found no indication that there are contaminated soils on portions of the Project site that would be disturbed during construction; therefore, the risk of accidental release of hazardous materials from construction of all Project components would be **less than significant**.

Operation

Mining

The Phase I Environmental Site Assessment indicated the possibility of localized pesticides in on-site soils from historic use at the on-site corral area located at the northeast portion of the Project site. The area would be used as the permanent overburden stockpile area and would not require excavation. However, because pesticides may have been used in the on-site corral area and soil could be disturbed during placement of overburden, the Phase I Environmental Site Assessment recommended shallow soil sampling be completed in the corral area. Disturbance of pesticides could create a significant hazard due to accidental release of these contaminants, if present in the soils. This would be a **significant** impact.

All Other Components

The Phase I Environmental Site Assessment found no indication that there are contaminated soils elsewhere on the Project site; therefore, the risk of accidental release of hazardous materials from all other components of the Project would be **less than significant**.

Reclamation

Following implementation of Mitigation Measure 3.9-2 during the operation phase, on-site contaminated soils, if present, would be remediated. Therefore, there would be no further risk of release of historic pesticides into the environment during reclamation, and **no impact** would occur.

Summary

The only portion of the Project site identified where the potential for exposure to pesticides used historically is the corral area in the northeast potion of the Project site. This area would be disturbed during placement of the overburden stockpile, which could result in release of contaminants, if present. This would be a **significant impact**.

Mitigation Measure 3.9-2: The Project Applicant shall analyze and remove suspected residual pesticides in corral on-site soils. This measure applies to construction and mining and applies only to the corral area soils identified in the Phase I Environmental Site Assessment. Specifically, the Applicant shall implement the following:

a) Prior to issuance of a grading permit or any soil-disturbing activities, including placement of overburden material, within the corral area (shown on Figure 3 in Appendix H), the Project Applicant shall have soil samples collected and analyzed by a qualified environmental professional to determine if residual pesticides are present in on-site soils within the corral area. If residual pesticides are detected at levels that exceed regulatory thresholds, the geographical and vertical extent of contamination shall be identified, and recommendations for a Health and Safety Plan and methods for cleanup shall be implemented, as applicable. This work shall be performed under the oversight of the County's Site Cleanup Program (SCP) within the Department of Environmental Health (DEH) Site Mitigation Programs (County of Santa Clara 2021b) with copies of all documentation provided to the County Department of Planning and Development.

b) If residual pesticides are present at the corral site, then the Applicant shall have soils containing pesticides removed from the site and characterized and disposed of according to the California Hazardous Waste Regulations. Contaminated soil that exceeds regulatory thresholds shall be handled by trained personnel using appropriate personal protective equipment (PPE) and engineering and dust controls, in accordance with local, state, and federal laws, such as those enforced by Cal/OSHA and the Bay Area Air Quality Management District (BAAQMD). Any contaminated soils that are removed from the site shall be disposed of at a licensed hazardous materials disposal site.

Significance after Mitigation: Less than significant

By requiring that soils be tested and that any pesticide-contaminated soils be removed and disposed of in an appropriate facility, Mitigation Measure 3.9-2 would ensure that workers, the public and the environment are protected from exposure to those residual pesticides during all ground-disturbing phases of the Project. Thus, with implementation of Mitigation Measure 3.9-2, environmental impacts from pesticides would be reduced to less than significant with mitigation.

3.9.4.4 Cumulative Analysis

Impact 3.9-3: The Project would contribute to the cumulative increases in the risk of exposure to hazardous materials (Less than Significant with Mitigation)

The geographic scope of impacts associated with hazardous materials generally encompasses the Project site, a 0.25-mile radius area around the Project site and the roadways that could be used to transport hazardous materials for the Project use. A 0.25-mile radius area allows for a conservative cumulative analysis that ensures that all potential cumulative impacts will be assessed. Hazards and exposure risks related to hazards and hazardous materials are typically localized in nature since they tend to be related to isolated events and on-site existing hazardous conditions and/or hazards caused by the Project's construction or operation. A geographic scope of a 0.25-mile radius area also coincides with the distance used to determine whether hazardous emissions or materials would have a significant impact upon an existing or proposed school, as discussed above.

As described in Section 3.1.6, *Cumulative Scenario*, there are several projects, primarily infrastructure and capital improvement projects, as well as private site developments, proposed within a 15-mile radius of the Project site. Only one project, the U.S. 101 Widening, is within 0.25 miles of the Project site. Construction and maintenance of this highway improvement would involve the use of hazardous materials. That project is dependent on state funding, and at this time the project is only 1 percent funded with no known schedule. However, the widening could occur within the 30-year life of the Project. If an accidental release of hazardous materials occurred at both the highway construction and the Project, it could result in greater exposure to hazardous materials then a single accidental release. Compliance with applicable laws and regulations governing the transport, storage and use of hazardous materials would assure that accidental releases would be prevented or contained and cleaned up promptly. Therefore, it is unlikely that there would be an accidental release from both the Project and the highway widening that could combine in a manner that would result in a substantial risk to construction employees, Project employees and/or nearby residents. For this reason, the Project's contribution to cumulative risk of exposure to hazardous materials would not combine with the incremental contributions of other projects in the cumulative scenario to cause a significant cumulative effect. Accordingly, the cumulative impact related to the transport, use, and storage of hazardous materials would be less than cumulatively considerable, and thus **less than significant**.

With respect to the accidental release of existing environmental contaminants, as explained in Section 3.9.3, *Environmental Setting*, there is no indication of an existing significant cumulative effect relating to hazards and hazardous materials in the study area (such as widespread contamination by historic use of pesticides). The impact related to Project disturbance and accidental release of historic pesticide residues would be local to the Project site and would have minimal potential to combine with releases from other sites, such as by accidental release to the same waterway. Nonetheless, if such releases were to occur, the cumulative impact on human health and/or the environment could be significant, and the Project's contribution to this cumulative impact would be considerable. Therefore, this impact is considered **significant**.

Mitigation Measure 3.9-3: Implement Mitigation Measure 3.9-2.

Significance after Mitigation: Less than significant

Implementation of Mitigation Measure 3.9-2 would ensure that accidental releases from the Project site would be avoided by removing any identified contaminated soils in accordance with all applicable regulations for handling of hazardous wastes. This would reduce the Project's contribution to any potential cumulative impact to a level that is not cumulatively considerable, and thus less than significant.

3.9.5 References

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3.10 Hydrology and Water Quality

3.10.1 Introduction

This section describes the baseline conditions relevant to surface water and groundwater hydrology and water quality for the Sargent Quarry Project (Project) as well as the applicable federal, State, and local laws, ordinances, and regulations relevant to water resources. The physical setting and baseline conditions provide the basis for the analysis of surface water and groundwater hydrology and water quality impacts, which includes consideration of whether the Project would violate water quality standards or waste discharge requirements, alter existing drainage patterns of the site or area, contribute to or create polluted runoff, degrade surface and groundwater quality, or increase flood risks on- and off-site. Detailed reports considered in the analysis include a drainage study, groundwater analysis, industrial Stormwater Pollution Prevention Plan (SWPPP), and water supply assessment (WSA). Each is provided in Appendix I. The availability of water to supply the Project is addressed in Section 3.14, *Utilities and Service Systems*.

Public comments received on the NOP (Appendix A) relevant to water resources included concerns that Project implementation could degrade surface and groundwater quality as a result of sediment and other pollutants transported off-site in runoff, result in reduced stream flows in surface waters downgradient of the Project site (such as the Pajaro River), contribute contaminants (such as sediment or other pollutants) from settling pond discharges to surface waters, and impact existing wells and/or result in reduced surface flows in the Pajaro River and contributing tributaries as a result of groundwater-surface water interactions from proposed groundwater extractions. These comments are addressed below.

3.10.2 Regulatory Setting

3.10.2.1 Federal

Clean Water Act

Under the Clean Water Act of 1977, the U.S. Environmental Protection Agency (USEPA) seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways and manage polluted runoff. The Clean Water Act authorizes the USEPA to implement water quality regulations. The relevant sections of the Act are summarized below.

Clean Water Act Section 303: Water Quality Standards and Implementation Plans

Section 303 of the Clean Water Act requires states to designate beneficial uses for water bodies or segments of water bodies and to establish water quality standards to protect those uses for all waters of the U.S. Under Section 303(d), states, territories, and authorized tribes are required to develop lists of impaired waters. Impaired waters are waters that do not meet water quality standards established by the state, even after point sources of pollution have been equipped with the minimum required levels of pollution control technology. The law requires that these jurisdictions establish a priority ranking for listed waters and develop action plans to improve water quality. Inclusion of a water body on the Section 303(d) List of Impaired Water Bodies triggers development of a Total Maximum Daily Load (TMDL) for that water body and a plan to control the associated pollutant/stressor on the list. The TMDL is the maximum amount of a pollutant/stressor that a waterbody can assimilate and still meet the water quality standards. Typically, a TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. In accordance with Section 303(d), the Central Coast Regional Water Quality Control Board (CCRWQCB) has identified impaired water bodies within its jurisdiction, and the pollutant or stressor responsible for impairing the water quality. Detailed discussion of impaired water bodies relevant to the Project, including the pollutants that cause the impairments, and the potential sources of the pollutants are discussed in Section 3.10.3.2, *Surface Water Resources*.

Clean Water Act Section 401: Water Quality Certification

Section 401 of the Clean Water Act (33 U.S.C. Section 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into navigable waters to obtain a certification from the State in which the discharge originates. The certification ensures that the discharge will comply with the applicable effluent limitations and water quality standards (see Section 3.4, *Biological Resources*, for additional details). The nine Regional Water Quality Control Boards, including the CCRWQCB, are responsible for implementing Section 401 in California.

Clean Water Act Section 402: National Pollutant Discharge Elimination System

The NPDES permit program under Section 402 is one of the primary mechanisms for controlling water pollution through the regulation of sources that discharge pollutants into waters of the United States. The USEPA has delegated authority of issuing NPDES permits in California to the California State Water Resources Control Board (SWRCB), which delegates authority among the nine regional boards. The CCRWQCB regulates water quality in the vicinity of the Project site. The NPDES permit program is discussed in detail in Section 3.10.2.2.

Section 404: Permits for Fill Placement in Waters of The United States

Waters of the United States (including wetlands) are protected under Section 404 of the Clean Water Act. Any activity that involves a discharge of dredged or fill material into waters of the United States, including wetlands, is subject to regulation by the U.S. Army Corps of Engineers (USACE) (see Section 3.4, *Biological Resources*, for additional details).

California Toxics Rule, 40 CFR 131.38

In 2000, the USEPA promulgated numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards to be applied to waters within California, filling a previously existing gap in California water quality standards. These federal criteria are legally applicable in California for inland surface waters, enclosed bays, and estuaries for all purposes and programs under the Clean Water Act. The USEPA and the SWRCB have the authority to enforce these standards, which are incorporated into the NPDES permits that regulate existing discharges in the vicinity of the Project site.

Federal Emergency Management Agency

The 100-Year floodplain denotes an area that has a 1 percent chance of being inundated during any 12-month period. Pursuant to the National Flood Insurance Act of 1968, floodplain zones (Special Flood Hazard Areas [SFHA]) are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs). These tools assist communities in mitigating flood hazards through land use planning. FEMA also outlines specific regulations, intended to be adopted by the local jurisdictions, for any construction, whether residential, commercial, or industrial within 100-year floodplains.

3.10.2.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Division 7 of the California Water Code) provides the basis for water quality regulation within California. This Act establishes the authority of the SWRCB and the nine RWQCBs. The SWRCB administers water rights, sets State policy for water pollution control, and implements various water quality functions throughout the State, while the RWQCBs conduct planning, permitting, and most enforcement activities.

The Porter-Cologne Act requires the SWRCB and/or the RWQCBs to adopt statewide and/or regional water quality control plans, the purpose of which is to establish water quality objectives for specific water bodies. The CCRWQCB has prepared the *Water Quality Control Plan for the Central Coastal Basins* (Basin Plan) (CCRWQCB 2019) that establishes water quality objectives and implementation programs to meet the stated objectives and to protect the beneficial uses of the water bodies (discussed in detail in Section 3.10.3.2, *Surface Water Resources*). The Porter-Cologne Act also authorizes the NPDES program under the Clean Water Act, which establishes effluent limitations and water quality requirements for discharges to waters of the state. Most of the implementation of SWRCB's responsibilities is delegated to the nine RWQCBs. Under the NPDES program, the CCRWQCB has established permit requirements for stormwater runoff applicable to the Project site (see below).

NPDES Waste Discharge Program

The Clean Water Act established the NPDES program to protect the water quality of receiving waters of the United States. In California, the SWRCB and RWQCBs implement the NPDES program, which is integrated with the Porter-Colognes Act's waste discharge requirements (WDRs) program. Under Clean Water Act Section 402, discharging pollutants to receiving waters of the United States is prohibited unless the discharge is in compliance with an NPDES permit. Effluent limitations serve as the primary mechanism in NPDES permits for controlling discharges of pollutants to receiving waters both from construction activities and discharges from operation of municipal or industrial facilities. When developing effluent limitations for an NPDES permit, a permit applicant must consider limits based on both the technology available to control the pollutants (i.e., technology-based effluent limits) and limits that are protective of the water quality standards of the receiving water (i.e., water quality-based effluent limits[1] if technology-based

[1] Water quality-based effluent limits specify the level of pollutant (or pollutant parameter), generally expressed as a concentration, that is allowable.

limits are not sufficient to protect the water body). For inland surface waters and enclosed bays and estuaries, the water-quality-based effluent limitations are based on criteria in the National Toxics Rule and the California Toxics Rule, and objectives and beneficial uses defined in the applicable Basin Plan. There are two types of NPDES permits: individual permits tailored to an individual facility and general permits that cover multiple facilities or activities within a specific category. The NPDES permits relevant to the Project are described below.

NPDES Construction General Permit

The State of California adopted a Construction General Permit as part of the NPDES program on September 2, 2009 (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ). The Construction General Permit regulates construction site stormwater management. Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the Construction General Permit for discharges of stormwater associated with construction activity.

The Project would be required to comply with the permit requirements to control stormwater discharges from the sites where proposed Project elements are being constructed (such as the stormwater treatment facility, access roads, and creek crossings). Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation as would occur on the future soil borrow site, as well as construction of buildings.

In the vicinity of the Project site, the Construction General Permit is implemented and enforced by the CCRWQCB, which administers the stormwater permitting program. To obtain coverage under this permit, Project operators must electronically file Permit Registration Documents, which include a Notice of Intent (NOI), a SWPPP, and other compliance-related documents. An appropriate permit fee must also be submitted to SWRCB. SWPPPs are a required component of the Construction General Permit and must be prepared by a State-Qualified SWPPP Developer (QSD) and implemented by a State-Qualified SWPPP Practitioner (QSP). SWPPPs must describe the specific erosion control and stormwater quality BMPs being implemented to minimize pollutants in stormwater runoff, and detail their placement and proper installation.

The SWPPP identifies BMPs that must be implemented to reduce construction effects on receiving water quality based on potential pollutants. The BMPs identified are directed at implementing both sediment and erosion control measures and other measures to control potential chemical contaminants. In addition, the SWPPP is required to contain a visual monitoring program and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The SWPPP also includes descriptions of the BMPs to reduce pollutants in stormwater discharges after all construction phases have been completed at the site (post-construction BMPs). Dischargers are responsible for notifying the

CCRWQCB of violations or incidents of non-compliance, as well as for submitting annual reports identifying deficiencies of the BMPs and how the deficiencies were corrected.

The Construction General Permit includes several new requirements (as compared to the previous Construction General Permit, 99-08-DWQ), including risk-level assessment[2] for construction sites, an active stormwater effluent monitoring and reporting program during construction (for Risk Level II and III sites), rain event action plans for certain higher risk sites,[3] and numeric effluent limitations for pH and turbidity as well as requirements for qualified professionals that prepare and implement the plan. The risk assessment and SWPPP must be prepared by a QSD and implementation of the SWPPP must be overseen by a QSP. Site risk level is determined using a combination of the sediment risk of the project and the receiving water quality risk. Projects can be characterized as Risk Level 1, Level 2, or Level 3, and the minimum best management practices (stormwater controls) and monitoring that must be implemented during construction are based on the risk level. Under the direction of the QSD, the QSP conducts routine inspections of all BMPs, conducts surface water sampling, when necessary, and reports site conditions to the State and/or Regional Water Quality Control Board as part of Construction General Permit compliance monitoring and reporting using the Stormwater Multi-Application Reporting and Tracking System (SMARTS).

Project construction activities would be consistent with the Construction General Permit; compliance is required by law and the provisions of the permit and BMPs for construction and post-construction phases have proven effective in protecting water quality at construction sites and downgradient receiving waters (SWRCB 2013).

NPDES Industrial General Permit

In November 1990, as part of administering its Clean Water Act responsibilities, the USEPA published final regulations that establish application requirements for storm water permits. The regulations require specific categories of industrial facilities which discharge storm water to obtain coverage under the NPDES General Permit No. CAS000001 for Discharges of Storm Water Associated with Industrial Activities (NPDES Industrial Permit). The NPDES Industrial Permit requires regulated facilities to (among other things):

- Prepare and maintain a SWPPP (discussed below);
- Implement storm water BMPs to minimize discharge of pollutants in runoff;
- Conduct regular inspections of the facility, during both wet and dry weather;
- Collect and analyze samples of runoff at least twice per year from each discharge location; and
- Prepare and submit annual reports on storm water management activities.

2 The Construction General Permit defines three levels of risk (Risk Level I, II, and III) that may be assessed for a construction site. Risk is calculated based on the “project sediment risk”, which determines the relative amount of sediment that can be discharged given the project and location details, and the “receiving water risk” (the risk sediment discharges pose to the receiving waters).

3 Those sites that have a high potential for mobilizing sediment in stormwater and drain to a sediment-sensitive waterbody.

Included in these "industrial facilities" categories are quarrying and mining facilities. Industrial facilities that discharge stormwater either directly to surface waters or indirectly, must be covered by a permit. This includes the discharge of "sheet flow" through a drainage system or other conveyance. The permit also prohibits non-storm water discharges into the industrial stormwater system and is intended to authorize discharges composed entirely of industrial stormwater.

The Industrial General Permit Order 2014-0057-DWQrequires dischargers to file a NOI requesting coverage under this permit. The Industrial General Permit also requires dischargers to prepare and implement both a SWPPP and a Monitoring and Reporting Program (MRP) and to submit these plans to the RWQCB. The Applicant has prepared a SWPPP and a SWPPP Monitoring Program (Appendix I.4) to comply with these requirements. The SWPPP is intended to achieve two purposes: (1) to identify and evaluate sources of pollutions associated with industrial activities that could affect the quality of stormwater discharged and authorized non-stormwater discharged from a facility; and (2) to identify and implement site-specific BMPs that the facility is committed to implementing to minimize or prevent discharge of pollutants associated with industrial activities that may be in stormwater. The SWPPP addresses elimination of non-storm water discharges, pollutant sources and associated BMPs, storm water management, sedimentation and erosion control practices, preventative maintenance and good housekeeping practices, spill prevention and response, inspections, record keeping, and employee training.

Anti-Degradation Policy

The SWRCB Anti-Degradation Policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Water in California (SWRCB Resolution No. 68-16), restricts degradation of surface and groundwaters. Specifically, this policy protects water bodies where existing quality is higher than necessary for the protection of beneficial uses and requires that existing high quality water bodies be maintained to the maximum extent possible.

Under the Anti-Degradation Policy, any actions that can adversely affect water quality in all surface and groundwaters must: (1) be consistent with maximum benefit to the people of California; (2) not unreasonably affect present and anticipated beneficial use of the water; and (3) not result in water quality less than that prescribed in water quality plans and policies. Furthermore, any actions that can adversely affect surface waters are also subject to the federal Anti-Degradation Policy (40 CFR Section 131.12) developed under the Clean Water Act. Discharges from the Project that could affect surface water quality would be required to comply with the Anti-Degradation Policy, which is included as part of the NPDES permit requirements for point source discharges.

Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to SGMA, any local agency that has water supply, water management, or land use responsibilities within a groundwater basin may elect to be a "groundwater sustainability agency"

(GSA) for that basin (Water Code Section 10723). Groundwater sustainability agencies will have additional powers under the SGMA to manage groundwater within the basin, including, for example, the power to conduct investigations of the basin, to require registration of groundwater extraction facilities and metering of groundwater extractions, regulate groundwater extractions from individual groundwater wells or wells generally, and to assess fees on groundwater extractions (see generally, Water Code Section 10725 et seq.). GSAs must prepare a Groundwater Sustainability Plans (GSP) that describe measures and objectives the GSA would implement to sustain groundwater resources for the current and future beneficial uses in a particular basin. The objectives can include those to:

- Provide long-term, reliable, and efficient groundwater supply for agricultural, domestic, and municipal and industrial uses,
- Provide reliable storage for water supply resilience during droughts and shortages,
- Protect groundwater quality,
- Prevent subsidence
- Support beneficial uses of interconnected surface waters, and
- Support integrated and cooperative water resource management.

SGMA also provides local agencies with additional tools and resources designed to ensure that the state's groundwater basins are sustainably managed. The new groundwater well proposed for the Project site would be constructed within the Llagas Subbasin. Valley Water is the GSA for the Llagas Subbasin, and adopted the Groundwater Management Plan (GWMP) for the Santa Clara and Llagas subbasins in November 2021 (Valley Water 2021a).[4] Groundwater management actions developed in the GWMP would pertain to the groundwater pumping proposed by the Project. As the Project site is close to the basin boundary of the Llagas and San Benito subbasins, proposed groundwater management actions in the GSA prepared for the San Benito subbasin (SBCWD 2021) may also apply to groundwater use by the Project. Additionally, although located west of the Project site, the Pajaro Valley Groundwater Management Agency (PV Water) is supplied by the Pajaro River. PV Water submitted the Basin Management Plan as an alternative to a GSP in December 2016 and in July 2019, DWR approved the alternative plan as functionally equivalent to a GSP. Groundwater management actions identified by PV Water's GSP may also apply to groundwater use at the Project site.

Executive Order N-7-22

In response to the continuing drought, Executive Order (EO) N-7-22 was signed in March 2022. The provisions of EO N-7-22 include a requirement that, prior to approving a permit for a new groundwater well and/or alterations to an existing well in a basin subject to the SGMA and classified as medium- or high-priority, the permitting jurisdiction must obtain written verification from the applicable Groundwater Sustainability Agency that groundwater extraction by the proposed well would not be inconsistent with the applicable, adopted Groundwater Sustainability

4 Valley Water's Groundwater Management Plan contain information that is functionally equivalent to elements required SGMA for a GSP.

Plan. In addition, the permitting jurisdiction must determine that the proposed well would not likely interfere with the production and functioning of existing nearby wells, and would not likely cause subsidence that would adversely affect or damage nearby infrastructure.

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act of 1975 (SMARA), as amended, and its implementing regulations establish requirements for mineral extraction that are designed to prevent or minimize the negative public health, property, and environmental impacts associated with surface mining. As related to hydrologic and water quality issues, the process of reclamation includes maintaining water quality, and minimizing flooding and erosion damage to wildlife and aquatic habitats caused by surface mining. The requirements of the Act apply to any surface mining operations that disturb more than one acre or remove more than 1,000 cubic yards of material. Therefore, the proposed Project is subject to the requirements of SMARA.

Under SMARA, all operators of surface mines in California must prepare and submit for approval by the lead agency a reclamation plan, along with financial assurances that sufficient funds will be available to accomplish reclamation (Pub. Res. Code Section 2770). This plan must be prepared by the Applicant prior to initiation of mineral extraction activities. SMARA is administered by lead agencies (most often counties or cities) and the California Department of Conservation. The County is the SMARA Lead Agency for this Project.

SMARA and its implementing regulations contain number of provisions addressing geotechnical and slope stability issues (see Section 3.7, *Geology, Soils, and Paleontological Resources*, for further detail) as well as drainage diversion structures, waterways (14 California Code of Regulations (CCR) Section 3706) and stream protection including surface and groundwater (14 CCR Section 3710). SMARA also dictates that erosion control methods shall be designed for the 20-year storm, and shall control erosion and sedimentation. The SMARA regulations also require reclamation plans to include performance standards for drainage and erosion to protect water quality, including streams, surface and groundwater. These performance standards must ensure compliance with the CWA, Porter-Cologne and other legal requirements (14 CCR Sections 3706, 3710).

3.10.2.3 Local

County of Santa Clara General Plan

The County of Santa Clara General Plan Safety and Noise element contains the following planning strategies, policies, and implementation recommendations regarding water quality:

Water Quality & Watershed Management

Strategy #1: Reduce Non-Point Source Pollution

Policy C-RC 19: The strategies for maintaining and improving water quality on a countywide basis, in addition to ongoing point source regulation, should include:

a. effective non-point source pollution control

b. restoration of wetlands, riparian areas, and other habitats which serve to improve Bay water quality

c. comprehensive Watershed Management Plans and BMPs

Policy C-RC 20: Adequate safeguards for water resources and habitats should be developed and enforced to avoid or minimize water pollution of various kinds, including:

a. erosion and sedimentation

b. organic matter and wastes

c. pesticides and herbicides

d. effluent from inadequately functioning septic systems

e. effluent from municipal wastewater treatment plants

f. chemicals used in industrial and commercial activities and processes

g. industrial wastewater discharges

h. hazardous wastes

i. non-point source pollution

Policy R-RC 13: Sedimentation and erosion shall be minimized through controls over development, including grading, quarrying, vegetation removal, road and bridge construction, and other uses which pose such a threat to water quality.

Policy R-RC 35: Flood control modifications to be made in streams that have substantial existing natural areas should employ flood control designs which enhance riparian resources and avoid to the maximum extent possible significant alteration of the stream, its hydrology, and its environs.

Policy R-RC 43: Large scale grading and clearing of land should not be allowed if it will significantly degrade valuable habitat or impair surface water quality.

Policy R-RC 73: The extraction of mineral resources, including sand and gravel, should be carefully conditioned and regulated to mitigate potential adverse environmental impacts, including mitigation measures for potential increases in siltation and/or pollution of water resources in order to adequately protect the local water supply.

County of Santa Clara Surface Mining and Land Reclamation Standards

The Santa Clara County Zoning Ordinance contains standards for surface mining operations that include protections for streams and water-bearing aquifers. Section 4.10.370, Part II, Subsection A.9 requires mining operations "…to be conducted in a manner so as to keep adjacent streams, percolation ponds, or water bearing strata reasonably free from undesirable obstruction, silting, contamination, or pollution of any kind. The objective is to prevent discharges, which would result in higher concentrations of silt than existed in off-site water prior to mining operations." It further requires the removal of vegetation and overburden prior to surface mining to be kept to the minimum practicable and requires stockpiles to be managed to limit water and wind erosion. This subsection states that permit applicants shall comply with applicable requirements of federal, state, and local permitting agencies regarding all matters which are within the jurisdiction of those agencies, including but not limited to:

- Excavation in the natural or artificially enlarged channel of any river, creek, stream or natural or artificial drainage channel when such excavation may result in the deposit of silt therein
- Maximum depth of excavation shall not be below existing streambed or groundwater table except in such cases where the reclamation plan indicates that a lake or lakes will be part of the final use of the land or where such plan indicates that adequate fill to be used to refill such excavation to conform to the approved reclamation plan
- Erosion control facilities, such as detention basins, settling ponds, desilting or energy dissipater ditches, stream bank stabilization, and diking necessary to control erosion

Lastly, the subsection requires that "Excavations," which may penetrate near or into usable water-bearing strata, will not reduce the transmissivity or area through which water may flow unless approved equivalent transmissivity or area has been provided elsewhere, nor subject such groundwater basin or sub-basin to pollution or contamination."

Santa Clara Valley Water District

The Santa Clara Velley Water District (Valley Water) operates as the water supply and flood management agency for the County. Its stewardship also includes creek restoration, pollution prevention efforts, and groundwater recharge. Valley Water requires permits for all well construction and abandonment/ destruction work, and most exploratory boring for groundwater exploration.

Santa Clara County faces periods of severe drought, and Valley Water recognizes that water conservation is critical to sustainability. The 2020 Urban Water Management Plan (UWMP) prepared by Valley Water (Valley Water 2021b) projects water demand through 2045 for normal and dry years, describes the water supplies, and outlines a five-stage water shortage contingency plan to decrease water demand during periods of water shortage, including water conservation measures that may be enacted by Valley Water. The 2020 UWMP includes water supply estimates for future single dry years and multiple dry year periods on a Countywide basis.

Valley Water along with 15 cities, the County of Santa Clara, and business, agriculture, and streamside property owners and other environmental interest groups formed the Water Resources Protection Collaborative in 2002 to clarify and streamline local permitting for streamside activities. In 2007, the Collaborative adopted a guidebook entitled Guidelines and Standards for Land Use Near Streams: A Manual of Tools, Standards, and Procedures to Protect Streams and Streamside Resource in Santa Clara County (2006), and replaced its existing streamside protection ordinance (Ordinance 83-2) with the Water Resources Protection Ordinance. The guidebook provides a framework for evaluating permit applications and establishing permit conditions.

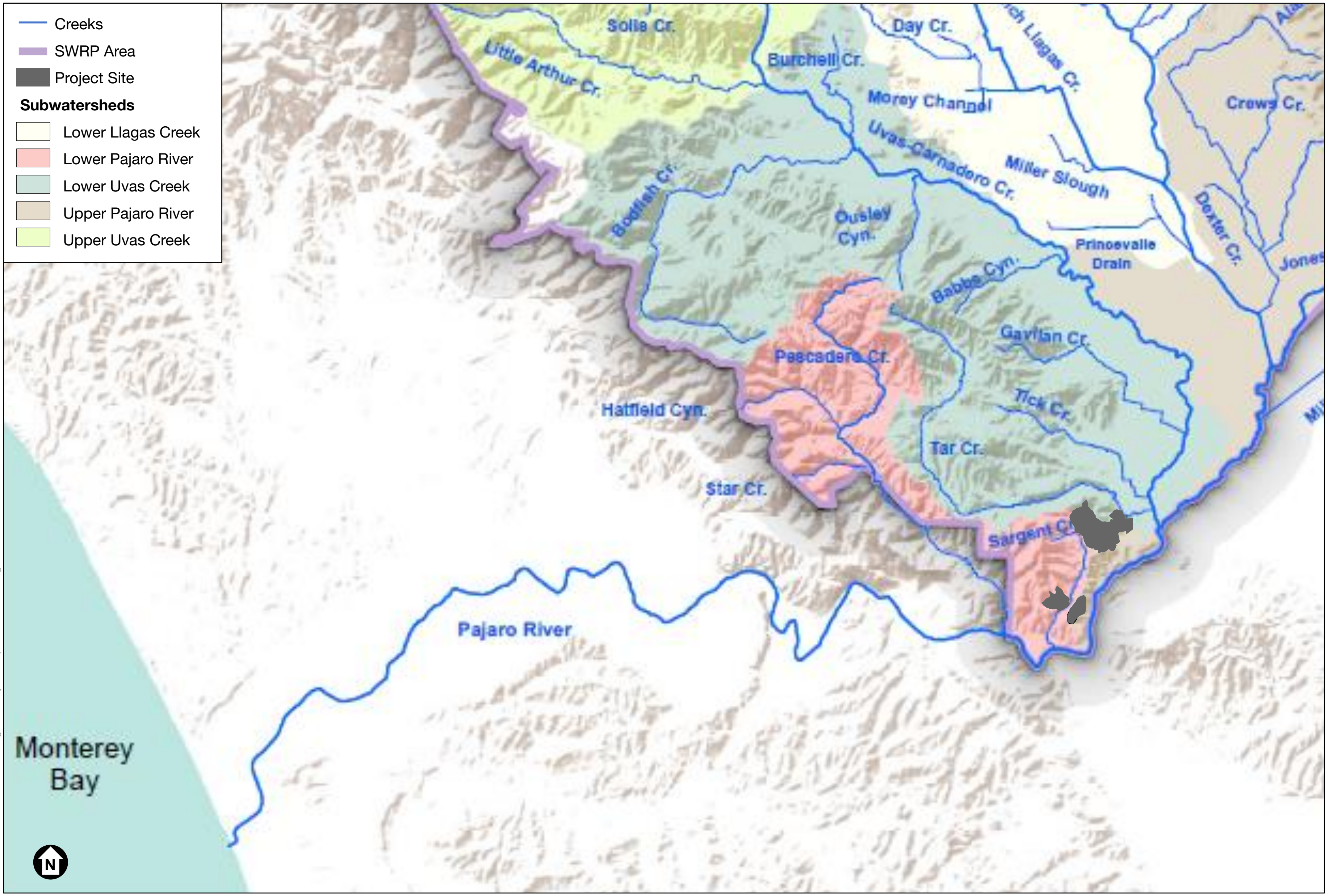
3.10.3 Environmental Setting

3.10.3.1 Regional Setting

The Project site is located within the greater Pajaro River watershed. The Pajaro River watershed is approximately 1,300 square miles in size and covers portions of Santa Clara, Santa Cruz, San Benito, and Monterey counties. Water resources in this region include rivers, streams, sloughs, marshes, wetlands, channels, and underground aquifers. The Pajaro River marks the southern boundary of Santa Clara County, as it abuts San Benito County, and drains to Monterey Bay near Watsonville. Major tributaries to the Pajaro River include Uvas-Carnadero Creek, Llagas Creek, and Pacheco Creek (Valley Water 2020a).

The Project site is located within the Lower Uvas Creek subwatershed and the Lower Pajaro River subwatershed (**Figure 3.10-1**). The northern portion of the Project site in the vicinity of Tar Creek, which includes the proposed processing plant and permanent overburden stockpile area, is located within the Lower Uvas Creek subwatershed area, which drains an area of 40 square miles, and is a part of the Uvas-Llagas watershed (104 square miles) within the larger Pajaro River Watershed. Tar Creek drains the northern portion of the Project site within the Lower Uvas Creek subwatershed and joins Uvas-Carnadero Creek upstream of its confluence with the Pajaro River at the drainage point of the subwatershed. The Uvas-Llagas watershed originates from both the Santa Cruz Mountains and the Diablo Range and land use is a largely rural supporting farming communities and cattle ranches with significant open space and natural areas. The remaining portions of the Project site, including the proposed mining areas, access roads, and conveyor belts, are located within the Lower Pajaro River subwatershed, covering an area of 52 square miles. In the vicinity of the Project site, the Lower Pajaro River subwatershed is drained primarily by Sargent Creek which flows into the Pajaro River south of the Project site approximately 1.3 miles upstream of the confluence of Pescadero Creek and the Pajaro River (Valley Water 2020b).

The uplands of the southern Santa Cruz Mountains and the Sargent Hills are surrounded by Gilroy-Hollister Valley area Llagas, Bolsa, and San Juan Bautista groundwater subbasins to the east and the Pajaro Valley Groundwater Basin, managed by the Pajaro Valley Water Management Agency (PVWMA) to the west. The upland areas are not considered part of the groundwater subbasins. However, the water district, Valley Water, identifies the Sargent Hills, including the Project site, as a recharge area for the Llagas Area Groundwater Subbasin (Llagas Subbasin). While most of the Project site is not located within a designated groundwater basin, the northern part of the Project site, in the vicinity of Tar Creek, overlies the Llagas Subbasin and the area underlying proposed mining Phases 3 and 4 is near the edge of the San Juan Bautista Groundwater Subbasin (San Juan Bautista subbasin). Businesses, residents, and farmers in south Santa Clara County are primarily reliant on groundwater for their water supply, and Valley Water actively recharges the Llagas Groundwater Subbasin by percolating local and imported water through a series of streams, channels, and percolation ponds.



SOURCE: Valley Water, 2020a

SCC Sargent Quarry

Figure 3.10-1
Creeks and Subwatersheds within the SWRP Area

ESA

3.10.3.2 Surface Water Resources

Climate and Topography

Climate has a significant influence on water use on a seasonal and annual basis. This influence increases for water uses in outside areas, such as dust control, pond evaporation, and landscape irrigation. The county has a Mediterranean climate, characterized by dry summers and wet winters with year-round moderate-to-warm temperatures. Reflecting this pattern, water demand in the county is greater in the summer than in the winter (Appendix I.3). The annual average temperature in the Project site and vicinity is 58°F with an extreme high of 105°F and extreme low of 16°F. Average precipitation in the region is approximately 21 inches annually, the majority of which falls between October and March (Appendix B, Mining and Reclamation Plan). At the Project site, average precipitation between 2009 and 2020 was 12 inches annually (Appendix I.3). The 100-year, 24-hour precipitation event generates 6.96 inches of rainfall (Appendix I.1).

Site topography consists of gently rolling to moderately steep hillsides with moderate to well-defined drainages. Elevations of the Project site range from a high of approximately 650 feet National Geodetic Vertical Datum (NGVD) near the northwestern edge of the site boundary, to a low of approximately 120 feet NGVD at the easterly edge of the processing area (Appendix B).

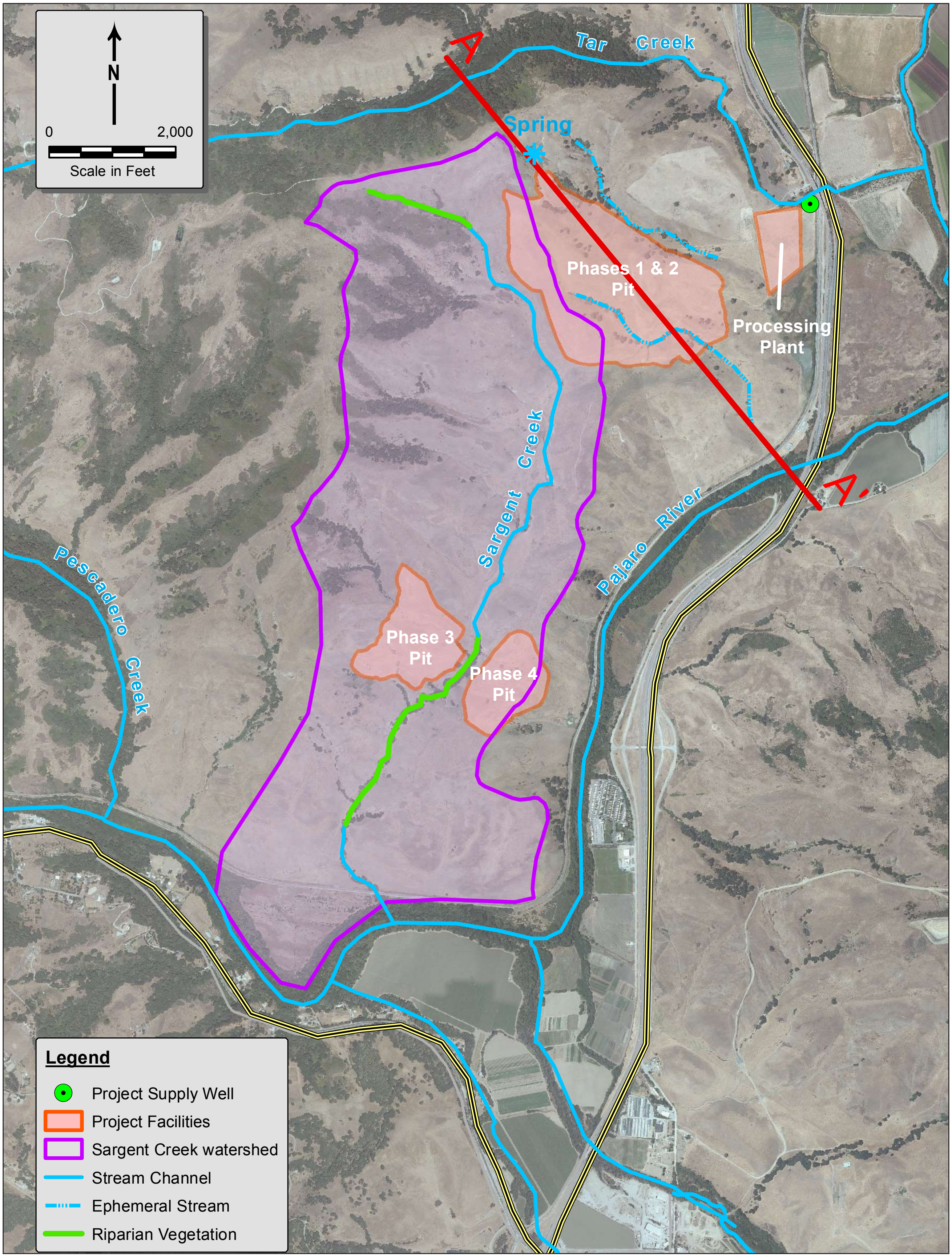
Project Site Hydrology

The Project site is located in the hills west of the Pajaro River where it leaves the Gilroy-Hollister Valley and flows south and west through a canyon to coastal plains and the Pacific Ocean near Watsonville (Appendix I.3). The Pajaro River flows close to the eastern and southern boundaries of the Project site and is at the lowest elevation of all the surface waterways in the area. It is the regional drain for surface and groundwater discharge. The Project site is surrounded by agricultural and ranching lands to the north, south, and west. U.S. 101 bounds the site on the east.

Two major creeks, Tar Creek and Sargent Creek, drain the Project site (**Figure 3.10-2**). In addition to Tar Creek and Sargent Creek, other smaller drainages and ephemeral channels with a defined bed and bank bisect the Project site. The Project site vegetation cover includes a light to moderate growth of grasses, shrubs, and some riparian habitat in the drainage areas (see Section 3.4, *Biological Resources*, for more information). The following discussion describes the key surface water features and site drainage for the Project site moving from north to south.

The Tar Creek watershed is larger and more incised than the Sargent Creek watershed to the south (Appendix B). Tar Creek has a watershed area of approximately 6.5 square miles (Appendix I.1), flowing west to east just north of the proposed processing plant site, and enters a concrete box culvert under the railroad track and U.S. 101. Tar Creek then continues to flow to the east through riparian vegetation for about 1,700 feet before entering Carnadero Creek approximately 0.3 mile upstream of the Carnadero Creek-Pajaro River confluence.

For the portion of the property that falls within the mining boundary of Phases 1 and 2, stormwater from the higher elevations and ridges flows into two ephemeral drainages and several drainage channels which traverse across the site from the high point at the northwestern edge of the mining area and join Tar Creek just north of the processing area. Two smaller drainage areas



SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

SOURCE: Appendix I

SCC Sargent Quarry

Figure 3.10-2
Locations of Sargent Creek Watershed Features

ESA

with ephemeral channels drain easterly through the proposed overburden stockpile area and the Phase 1 and 2 mining sites towards the Pajaro River. The stormwater runoff in these small drainage channels readily infiltrates into the soils. However, when infiltration capacity has been reached, accumulated surface stormwater runoff drains southeast down through natural swales and ravines into culverts, passing under U.S. 101 and flowing into the Pajaro River (Appendix B).

Sargent Creek is the primary surface water feature relevant to the proposed mining areas and drains the majority of the Project site. Sargent Creek has a watershed area of 1.7 square miles and drains to the south, emptying into the Pajaro River approximately 2 miles downstream of the proposed processing plant site (Appendix B). The Sargent Creek headwaters are located west and south of proposed mining Phases 1 and 2 and Sargent Creek runs primarily from north to south adjacent to the proposed quarry access road and conveyor belt and bisects the southern portion of the mining site where Phases 3 and 4 of mining operation are proposed. An impoundment of Sargent Creek exists about 2,000 feet upstream of the proposed Phases 3 and 4 quarry access road crossing of the creek. The impoundment was created when cattle ranchers using the property built a 6-foot-high earthen dam at least 50 years ago. The depth of water behind the dam is about 5 feet at the deepest. Normal season flow generally is entirely retained by the impoundment, resulting in no flow within Sargent Creek downstream of the impoundment for much of the year other than when flows south of the impoundment contribute directly to the creek via sheet flow or from smaller ephemeral drainage channels (Appendix I.1). The drainage of the existing topography of the areas proposed for mining as part of Phases 3 and 4 currently flow to Sargent Creek. The primary water feature associated with Phases 3 and 4 is an ephemeral drainage channel that drains approximately 75 acres upgradient of the Phase 3 mining area to the northeast and flows through the proposed Phase 3 mining area and into Sargent Creek approximately 100 feet downstream of the proposed access road creek crossing.

Surface Water Quality

The quality of surface water is primarily a function of land uses in the watershed. Local land uses influence the quality of surface waters through point source discharges (i.e., discrete discharges from discharge pipes) and nonpoint source discharges (e.g., direct storm runoff from slopes). Surface water runoff is generated by precipitation that cannot be absorbed into the ground in the period following a storm. Pollutants and sediments are transported in watersheds by stormwater runoff that reaches streams, rivers, and storm drains. The amount of surface water runoff is a factor of precipitation, ground saturation, and available permeable or pervious ground surfaces. Permeability is a measure of how quickly water can penetrate a surface area.

The Basin Plan (see Section 3.10.2.2) designates beneficial uses for specific surface waters and establishes water quality objectives to ensure those designated beneficial uses do not become impaired. Additionally, the Basin Plan contains implementation plans and policies for all waters within the jurisdictional area it covers. In the Project site and vicinity, the Basin Plan does not specifically identify beneficial uses for Sargent Creek or Tar Creek. However, Carnadero Creek downstream of Tar Creek and the Pajaro River downstream of Sargent Creek have beneficial uses identified (CCRWQCB 2019). The designated beneficial uses for Carnadero Creek include warm freshwater habitat (WARM); cold freshwater habitat (COLD); municipal and domestic supply

(MUN); and both water-contact and non-contact recreation (REC1 and REC2). The designated beneficial uses of the Pajaro River include agricultural supply (AGR); both water-contact and non-contact recreation (REC1 and REC2); municipal and domestic supply (MUN); warm freshwater habitat (WARM); cold freshwater habitat (COLD); and spawning, reproduction, and/ or early development (SPWN).

Section 303(d) of the Clean Water Act requires states, territories and authorized tribes to develop lists of impaired waters, i.e., waters that do not meet water quality standards or successfully support designated beneficial uses, even after point sources of pollution have been outfitted with the minimum required levels of pollution control technology. Currently Carnadero Creek and the Pajaro River are listed as having impaired beneficial uses (USEPA 2016). These water bodies are impaired by a variety of contaminants including sediment/turbidity, dissolved oxygen, pH, nitrate, chlorpyrifos, DDT, diazinon, chlorodane, unknown toxicities, boron, E. Coli, and fecal coliform. Such constituents originate from a variety of sources, but generally include agricultural activities, resource extraction, urban runoff/storm sewers, and unknown sources. In the context of the Project, the most relevant water quality impairments in Carnadero Creek and the Pajaro River are those for sediment/turbidity (USEPA 2021).

Turbidity refers to water that is cloudy, muddy, or opaque (turbid) because of suspended soil particles, algae, microbes, or organic matter. These tiny particles can absorb heat and raise water temperatures, reduce oxygen for aquatic animals, reduce native aquatic plant growth, clog fish gills, and smother fish eggs and aquatic insects. Within the watershed, turbidity levels increase as a result of removing streamside vegetation or channelizing streams, filling wetlands or other waters, increasing impervious areas, and routing rainwater runoff directly into a lake, stream, or sewer system rather than to areas where it can soak in to underlying soils. Sediment becomes a water quality issue when stormwater runoff erodes soil into waterways from fields, construction sites, yards, logging areas, streets and parking lots, and other areas. Sediment can make water murky, hurt the health and habitats of fish and other aquatic animals, interfere with uses like fishing and swimming, and carry other pollutants (USEPA 2021).

As discussed in Section 3.10.2, *Regulatory Setting*, the Clean Water Act requires jurisdictions to establish priority rankings for 303(d) listed waters and develop action plans, known as TMDLs, to improve water quality. A sediment TMDL was established for waterways within the Pajaro River Watershed due to the finding that anthropogenic watershed disturbances have accelerated the natural processes of erosion and sedimentation in the Pajaro River and tributary water bodies. Excessive sedimentation has caused the water quality objective for sediment to be exceeded, and the existing sediment load and rate have interfered with the beneficial uses of these waterbodies including fish and wildlife (COLD, MIGR, and SPWN) (CCRWQCB 2021).

Flood Risk

The Project site is located within Flood Zone D: areas in which flood hazards are undetermined, but possible. The FEMA flood risk determination is based, in part, on the fact that the FIRM for the Project site did not include an assessment by FEMA for flood risks associated with Tar Creek (FEMA 2009). To determine flood risk for the Project site, the 100-year flood limits of Tar Creek were modeled (Appendix I.1). Based on the assessment of the 100-year flood limits of Tar Creek, the proposed processing plant is located within an area at risk of inundation during a 100-year flood event (Figure 3B in Appendix I.1). The 100-year flood limits of Tar Creek extend south into the proposed processing plant site for approximately 350 feet with surface elevations ranging from 164.7 to 158.9 feet mean sea level (msl), representing approximately 2- to 3-foot inundation depths for portions of the processing plant site.

Portions of the Project site are adjacent to but not within a dam failure inundation zone for Anderson Dam, which is located approximately 18 miles to the northeast (SCVWD 2016). The inundation zone generally follows the Pajaro River.

3.10.3.3 Groundwater Resources

Information and data on groundwater occurrence and flow beneath the Project site was derived from a subsurface investigation report prepared by Sierra Geotechnical Services Inc. (SGS) (SGS 2016); a technical peer review of the SGS investigation by Golder Associates (Golder) (Golder 2017a); a SGS report responding to Golder's comments (SGS 2017b); and an evaluation of groundwater conditions and potential mining impacts prepared by Todd Groundwater (Appendix I.2). The section below considers the findings from these studies and presents what is known of the groundwater conditions underlying the Project site.

The available information indicates that groundwater occurs beneath the Project site within a shallow groundwater table[5] and may be contained in isolated fractures and granular sediments (landslide deposits) above the groundwater table (referred to as perched water[6]). No groundwater wells have been constructed in the mining areas or elsewhere on the site and thus, the presence and depth of a continuous groundwater table cannot be confirmed.

Beneath the Phases 1 and 2 pit, the presence of groundwater is identified at the surface by springs and riparian vegetation and by groundwater seepage reported by SGS in seven exploratory borings drilled to depths ranging between 35 and 95 feet below the ground surface. The spring is north of the Phases 1 and 2 pit at an elevation of 530 feet. A strip of riparian vegetation is present along the uppermost reach of Sargent Creek; vegetation of that type usually indicates the presence of a shallow water table (Figure 3.10-2) (Appendix I.2). A similar corridor of riparian vegetation is present along a lower reach of Sargent Creek, from the Phases 3 and 4 mining areas down to the Pajaro River floodplain. SGS encountered groundwater seepage in its exploratory borings at depths above the proposed final mining depths in the Phases 1 and 2 pit. SGS did not encounter groundwater in exploratory borings drilled at locations near the proposed Phases 3 and 4 pits.

Under current site conditions, rainfall infiltrates into the ground surface of the Project site and recharges the shallow water table, which flows through the sediments and rock downslope until it intersects the creek channel and discharges as surface flow. Shallow groundwater flow typically

5 The groundwater table is typically the first water encountered beneath the unsaturated upper soil horizon. The water table is usually recharged by rainfall infiltrating through overlying soils the water surface is not confined (remains at atmospheric pressure). Water elevations of the groundwater table fluctuate in response to recharge rates and outflow.

6 Perched groundwater is subsurface water that occurs in soils and rock that are above the groundwater table. These perched zones are often localized and not extensive compared to the water table or a deeper aquifer. Perched groundwater is separated from an underlying body of groundwater by an unsaturated zone.

mimics the direction of the ground slope. Thus, a shallow water table is likely along the lower reaches of Sargent Creek. In the mining areas, the water table is highest beneath ridges and groundwater flows approximately in the direction of the ground slope. Therefore, it is likely that the surface watershed divide coincides with the groundwater divide and groundwater near the Phase 3 and 4 pits flows toward the lower riparian corridor along Sargent Creek and groundwater near the Phase 1 and 2 pit flows toward the Pajaro River (Appendix I.2). However, the groundwater flow system in the upper part of the Sargent Creek watershed (near the Phases 1 and 2 pit) could be more complex, because faults that pass through the area could act as barriers to groundwater flow.

The Project site does not overlie an identified groundwater basin, but the Sargent Hills are bordered by the Llagas, Bolsa, and San Juan Bautista groundwater subbasins to the east. Valley Water identifies the Sargent Hills, including the Project site, as a recharge area for the Llagas Area Groundwater Subbasin (Llagas Subbasin). The northwestern portion of the Project site, in the vicinity of Tar Creek, partially overlies the Llagas Subbasin, and the area of the proposed processing plant site is situated at the basin’s edge. The proposed Phase 3 and 4 pits are along the western boundary of the San Juan Bautista Groundwater Subbasin (San Juan Bautista subbasin). Businesses, residents and farmers in south Santa Clara County rely primarily on groundwater for their water supply. Valley Water actively recharges the Llagas Groundwater Subbasin by percolating local and imported water through a series of streams, channels, and percolation ponds.

The Project would obtain a portion of its water supply from a groundwater production well proposed to be located near the processing plant site. The proposed well would be constructed in the deep water-bearing sediments within of the Llagas Subbasin. There are several other wells to the north and east of the proposed Project well. The closest belongs to the Applicant. The second closest is a monitoring well owned and operated by Valley Water. The third closest is one of ten wells owned by a neighboring landowner (Sun & Sons LP) that appear to be irrigation wells; this well would be located 690 feet from the processing plant and 2500 feet from the Phase 1 and 2 mining areas. The well is located next to a perennial[7] reach of the Pajaro River where the river gains flow by groundwater discharge from the Bolsa and Llagas subbasins. Construction information is not available for the irrigation well closest to the Project’s proposed supply well. However, driller’s logs for other wells in the area indicate that a typical depth to the top of the well screen is 100 feet and a typical total well depth is 400 feet. Groundwater level data (2012–2015) from a monitoring well belonging to Valley Water indicate that water levels recovered in winter each year to 9 feet below ground surface, which probably corresponds to the elevation of the nearby Pajaro River. In summer, water levels declined to 25 feet below ground surface in 2012 (normal year) and 45 feet below ground surface in 2014 and 2015 (dry years). Thus, the lowest static (non-pumping) water level in a dry year was 55 feet above the top of the screen (Appendix I.2).

Groundwater Quality

Water quality testing indicates that groundwater in the Santa Clara and Llagas subbasins is generally of good quality that meets drinking water standards in most wells for all constituents tested. The exception is nitrate, which was found above the regulatory standard of 10 parts per million (ppm) in 30 percent of the South County water supply wells sampled (primarily domestic

7 Pertains to a creek or river that flows throughout the year.

wells) due to current and historic sources (Valley Water 2017). The median concentration for nitrate ranges from 1.5 milligrams per liter (mg/L) in the Santa Clara Plain shallow aquifer to 10 mg/L in the Llagas Subbasin shallow aquifer. The median total dissolved solids (TDS) concentration ranges from 370 mg/L in the Llagas Subbasin principal aquifer to 438 mg/L in the Santa Clara Plain shallow aquifer. Valley Water continues to implement Salt and Nutrient Management Plans to support reduced nitrate loading and exposure (Valley Water 2017).

In 2017, Valley Water analyzed data from 24 monitoring wells near recycled water irrigation sites in the Santa Clara and the Llagas Subbasins. N-Nitrosodimethylamine (NDMA) and several perfluorinated compounds (PFCs) were detected in recycled water used for irrigation. Unlike some previous sampling events, NDMA was not detected in any wells. PFCs were detected in some shallow wells in the Santa Clara and the Llagas subbasins. Most monitoring wells demonstrated stable or decreasing trends for key water quality indicators, suggesting that groundwater is not significantly affected by recycled water use (Valley Water 2017).

There is no information on the quality of groundwater underlying the Project site. However, perched water or groundwater in a shallow water table is not typically used as domestic drinking water supply because of unreliable yields, fluctuating groundwater levels due to seasonal surface recharge, and generally poor water quality (e.g., increased TDS, elevated pH and possibly high nitrate levels), which may not meet state drinking water standards.

3.10.4 Impact Evaluation

3.10.4.1 Approach to the Analysis

Compliance with applicable federal, state, and local laws and regulations is assumed in the analysis of impacts because these regulatory requirements are mandatory and the application of the associated protective measures (such as BMPs, Monitoring and Reporting Plans, and the application of corrective actions) is non-discretionary minimizes and/or avoids hydrologic or water quality impacts. Further, regulatory agencies with jurisdiction and authority for oversight would require adherence to regulatory requirements as a condition of Project or permit approval and would continue to enforce applicable requirements throughout Project construction and operation phases.

To support the assessment of Project impacts, the Applicant provided the Sargent Quarry Mining and Reclamation Plan (Reclamation Plan) (Appendix B), a Preliminary Drainage Study prepared for the Project by Triad/Holmes Associates (Appendix I.1), and an Industrial SWPPP (Appendix I.4). These and other Applicant-provided studies were independently reviewed on the County's behalf and were found, together with other information in the record, to be suitable for reliance as part of the CEQA process. In addition, several reports were prepared by or on behalf of the EIR preparers identified in Chapter 5, *Report Preparation*, including an Evaluation of Groundwater Conditions and Potential Mining Impacts memorandum and corresponding Addendum by Todd Groundwater (Appendix I.2), and an Additional EIR Support memorandum presenting an analysis of groundwater, groundwater/surface water quality, and groundwater/ surface water flow-related impacts (Appendix I.5). Where applicable, the results and findings of the supporting technical studies were incorporated into the assessment of impacts.

3.10.4.2 Significance Criteria

Consistent with CEQA Guidelines Appendix G, a project would have a significant impact on hydrology or water quality if it would:

a) violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater 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:

    i. result in substantial erosion or siltation on- or off-site:

    ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

    iii. 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

    iv. 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.

3.10.4.3 Project Impacts

Impact 3.10-1: Project construction grading and other activities would substantially degrade surface or groundwater quality. (Less than Significant with Mitigation)

This impact discussion corresponds to Significance Criterion (a) and addresses whether Project construction would violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.

Construction

Access Road, Processing Plant, Conveyor Belt, Rail Spur, Roadway Improvements

Construction of the proposed processing plant, conveyor belts, rail spur, access road, and roadway improvements would include earthwork activities (i.e., grading, excavation, and other soil-disturbing activities) and the placement of imported engineered soils. Stormwater runoff from disturbed soils associated with construction activities is a common source of pollutants (mainly sediment) to receiving waters. Earthwork activities can render soils and sediments more susceptible to erosion from stormwater runoff and result in the migration of soil and sediment in stormwater runoff to downgradient water bodies.

The proposed processing plant site is immediately adjacent to and contributes runoff to Tar Creek. Additionally, a free-span bridge is proposed over Tar Creek to provide truck access to the processing plant from Old Monterey Road. The proposed access road and conveyor belt run north to south adjacent to Sargent Creek, and construction of the access road would include a creek crossing and installation of culverts near mining Phases 3 and 4. Improvements to the existing U.S. 101 on-ramp and portions of Old Monterey Road are proposed in areas upgradient of Project site drainage channels, tributaries, and/or other receiving waters. Excessive and improperly managed grading, excavation, soil stockpiling, or vegetation removal can lead to increased erosion of exposed earth and sedimentation of downgradient waters during rainy periods. Removing streamside vegetation or channelizing streams, such as at the proposed Sargent Creek access road crossing, also could result in increased turbidity in downgradient surface waters.

In addition, construction would likely involve the use of various materials typically associated with construction activities such as paint, solvents, oil and grease, petroleum hydrocarbons, concrete and associated concrete wash-out areas. If improperly handled, these materials could result in pollutants being mobilized and transported off-site by stormwater runoff (nonpoint source pollution) and degrade receiving water quality.

Because the construction activities proposed as part of the Project would occur in an area that exceeds 1 acre in size, all construction activities must comply with NPDES regulations and obtain coverage under the State Construction General Permit. Under the Construction General Permit, the Applicant or its contractor(s) would be required to implement construction BMPs as set forth in a detailed construction SWPPP. The BMPs are designed to prevent pollutants from coming into contact with stormwater and to keep all products of erosion and stormwater pollutants associated with construction activities from moving off-site into receiving waters. Typical BMPs to be implemented at construction sites include placement of fiber rolls or gravel barriers to detain small amounts of sediment from disturbed areas, and temporary or permanent covering of stockpiles to prevent rainfall from contacting the stockpiled material. In addition to erosion control BMPs, SWPPPs also include BMPs for preventing the discharge of pollutants other than sediment (e.g., paint, solvents, concrete, petroleum products) to downstream waters. BMPs for pollutants include conducting routine inspections of equipment for leaks, maintaining containers of supplies such that the contents are clearly labeled, the integrity of the containers is not compromised, and ensuring that construction materials are disposed of in accordance with applicable regulations. Compliance with a Construction General Permit is required by law and has proven effective in protecting water quality at construction sites (SWRCB 2013).

Compliance with the requirements of the Construction General Permit, including the implementation of associated BMPs, would prevent the discharge of pollutants to surface waters or groundwater and minimize or eliminate potential degradation of surface water or groundwater quality during construction of the described Project components due to the transport of pollutants in stormwater from active construction sites. Additionally, because construction activities and proposed Project components such as the Tar Creek bridge and Sargent Creek access road crossing would affect jurisdictional surface water features, the Project would be required to obtain a Section 404 Clean Water Act permit from the USACE, Section 401 Water Quality Certification from the CCRWQCB, and Section 1600 Streambed Alteration Agreement from the CDFW prior to initiating any construction activities within these areas (see Section 3.4, *Biological Resources*, for more information).

However, the Construction General Permit and associated SWPPP requirements do not specifically anticipate direct impacts to water quality that may result from work within stream channels, such as the proposed Tar Creek Bridge and Sargent Creek road crossing. Construction activities within stream channels pose an increased risk of water quality degradation due to the increased potential for erosion and sediment transport to occur within a disturbed channel bed. Also, as described in Section 3.4, *Biological Resources*, resource agency permits have not yet been issued and the conditions of those permits are not yet known. For these reasons, impacts to water quality from construction of the Tar Creek Bridge and Sargent Creek road crossing would be **significant**.

> **Mitigation Measure 3.10-1:** Implement Mitigation Measure 3.4-4 from Section 3.4, *Biological Resources*.
>
> **Significance after Mitigation:** Less than significant
>
> Mitigation Measure 3.4-4 requires that specific targeted avoidance and minimization measures, performance standards, and control measures be implemented during the initial Project construction phases to reduce runoff of pollutants and to protect water quality during construction through avoiding and/or minimizing construction activities within stream channels. Further, all such measures would be monitored by the qualified biologist who will survey the Project site prior to issuance of any construction permits and be present to monitor construction activities during initial ground disturbance or vegetation clearing. With implementation of Mitigation Measure 3.4-4, impacts relating to the violation of water quality standards, waste discharge requirements, or the degradation of surface and/or groundwater quality due to construction of the Project would be less than significant.

Impact 3.10-2: Project operation and subsequent reclamation of the Project site would not substantially degrade surface or groundwater quality. (Less than Significant)

This impact discussion corresponds to Significance Criterion (a) (see Section 3.10.4.2) and addresses whether Project operation and reclamation would violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.

Introduction

Project operation and reclamation of the Project site would involve grading, excavation, and earthmoving activities which could subject soil, either stockpiled or otherwise exposed, to erosion by stormwater runoff. Once dislodged by surface flow, soil particles become entrained in stormwater runoff and if not properly controlled, the sediment-laden runoff would be discharged to the various on-site ephemeral and/or intermittent drainage channels: Sargent Creek, Tar Creek, and ultimately to Carnadero Creek and the lower reach of the Pajaro River. Carnadero Creek and the Pajaro River are listed as impaired water bodies under Section 303(d) of the Clean Water Act due to sediment, among other pollutants.

Additional sediment input to the downgradient receiving waters from the Project site could increase the sediment load, increase turbidity, and contribute to degradation of downstream water quality. Operational and reclamation activities most likely to cause sediment to enter the waterways include initial development of the various project features (e.g., mining phase drainage and stormwater conveyance features and soil stockpiling), and ongoing quarrying activities, including topsoil and overburden removal, quarrying aggregate, transporting and storage of materials, and aggregate processing. In addition to sediment, other contaminants, such as grease, oil, or diesel fuel can enter the adjacent receiving waters if released during quarry operations. These compounds become attached to the sediment and are carried by stormwater runoff until the sediment settles out.

Regulatory Compliance

Project operation and reclamation would be required to adhere to the NPDES Permit for Industrial Activities (see Section 3.10.2.2), which includes specific water quality and hydrologic standards and requires monitoring of specified pollutants associated with the covered industrial activity and the subsequent correction of any water quality exceedances indicated by monitoring and reporting. The NPDES Permit for Industrial Activities requires that new dischargers who discharge into a water body with a 303(d) listed impairment are ineligible for coverage unless the discharger submits data and/or information, prepared by a Qualified Industrial Storm Water Practitioner (QISP), demonstrating that:

- The Discharger has eliminated all exposure to stormwater of the pollutant(s) for which the water body is impaired, has documented the procedures taken to prevent exposure on-site, and has retained such documentation with the SWPPP at the facility.
- The pollutant for which the water body is impaired is not present at the Discharger's facility, and the Discharger has retained documentation of this finding with the SWPPP at the facility.
- The discharge of any listed pollutant will not cause or contribute to an exceedance of a water quality standard. This is demonstrated if: (1) the discharge complies with water quality standard at the point of discharge, or (2) if there are sufficient remaining waste load allocations in an approved TMDL and the discharge is controlled at least as stringently as similar discharges subject to that TMDL.

Because a TMDL for sediment has been approved for Carnadero Creek and the Pajaro River, and due to sediment exposure being an inherent part of proposed operation and reclamation activities, the receiving water body impairment listing will need to be reviewed by a QISP to be eligible for coverage.

Adherence to the NPDES Permit for Industrial Activities requires implementation of a SWPPP to establish physical and operational BMPs for pollution controls and the containment and control of runoff at non-erosive velocities. Consistent with NPDES requirements, a SWPPP has been prepared for the Project (Appendix I.4). Development of this SWPPP included identification of the primary proposed activity areas that would contribute to site runoff as well as activities that could result in the contribution of stormwater pollutants and the specific pollutants associated with those activities (**Table 3.10-1**).

TABLE 3.10-1
CONTRIBUTING ACTIVITY AREAS TO SITE RUNOFF

Area No.	Description	Drainage Route(S) & Outfall	Activities That May Contribute Pollutants	Potential Pollutant(S)
Quarry-Related Contributing Activities				
1	Plant Site (7% impervious)	• Stormwater sheet flows west to east across the plant to on-site Sediment Basin • Brow ditch collects the stormwater and conveys it to on-site Sediment Pond • Culverts convey the stormwater under the paved access road to brow ditches • On site Sediment Basin collect the runoff from the Plant Site	• Vehicle and equipment parking • Bone yard (storage of misc. parts w/out fuel/oil) • Diesel Fueling Area • Stockpiling (processed material and topsoil) • Rock and Sand processing	• Sediment • Petroleum hydrocarbons • Oil and grease • Solvents • Diesel • Antifreeze • Human waste
2	Pits 1 and 2 (0% impervious)	• Swales around Pit 1 convey stormwater to Sargent Creek • Swale following benches through Pit 1 conveys stormwater to 3–36” culverts under access road and outlet to Sargent Creek • Swales around Pit 2 convey stormwater to Sargent Creek northwest of Pit 2 and to Pajaro River southeast of Pit 2	• Rock extraction • Sand extraction • Vehicle and equipment parking • Diesel Fueling Area • Stockpiling • Porta Potty	• Sediment • Petroleum hydrocarbons • Oil and grease • Solvents • Diesel • Antifreeze • Human waste • Disinfectants from Chemical Toilets
3	Pits 3 (0 % impervious)	• Swale around west side of Pit 3 conveys stormwater to Sargent Creek • Swale around south side of Pit 3 conveys stormwater to natural drainage feature and outlets to Pajaro River • Swale around north side of Pit 3 conveys stormwater to 36” culvert that outlets to natural drainage feature and eventually reaches Pajaro River	• Rock extraction • Sand extraction • Vehicle and equipment parking • Diesel Fueling Area • Stockpiling • Porta Potty	• Sediment • Petroleum hydrocarbons • Oil and grease • Solvents • Diesel • Antifreeze • Human waste • Disinfectants from Chemical Toilets
4	Access Road to Pits 1 and 2	• Runoff sheet flows across the access road to Sargent Creek	• Vehicle movement on the access road	• Sediment • Petroleum hydrocarbons • Oil and grease • Diesel

The SWPPP specifies implementation of BMPs sufficient to reduce significant hydrologic and water quality impacts (see Table 3 on p. 21 of Appendix I.4), including the concentration of pollutants in Project site stormwater runoff identified in Table 3.10-1. Erosion control measures are specified in the SWPPP, including BMPs to address sediments generated during the operational phase of the quarry and mining area development. Because mining and reclamation operations require on-going grading activities, sedimentation basins are proposed throughout the Project site during the operational and reclamation phases as the primary sediment control measures (Figure 2-15). Additional BMPs specified in the SWPPP for controlling erosion and sedimentation (see Table 5 on p. 30 of Appendix I.4) include measures such as silt fences, berms, coir wattles, hay bales, or similar means to deter erosion, employed as necessary at locations of identified concern over the course of operations, depending upon the particular configuration of the grading work and roadways. If soil erosion continues, vegetation of soils would be implemented using a seed/spraying technique. Maintenance BMPs required as part of implementation of SWPPP include cleaning of accumulated sediment, debris, and potential contaminants from the on-site drainage facilities before the start of the rainy seasons and as needed during the rainy season. Also, as discussed in Section 2.4.3, active mining and aggregate processing would not operate if a rain event of one-half inch (i.e., 0.5-inch storm) or more is forecasted as such storm events hinder the ability to mine and process material and result in poor or dangerous operating conditions on Project site access roads. Reducing or ceasing operations during large storm events and stabilizing exposed soils with temporary erosion control measures would minimize the potential for erosion and sediment transport in stormwater runoff from active industrial areas. Monitoring of weather conditions will occur consistent with the requirements of the Industrial SWPPP.

The standards and specific BMPs required as part of the SWPPP are industry-accepted methods that have been proven effective at attenuating concentrated stormwater flows, reducing erosion, and minimizing or avoiding the transport of pollutants associated with industrial activities in stormwater. These BMPs provide protection against water quality degradation, provided that they are maintained effectively and monitored regularly and that the SWPPP includes a monitoring and maintenance element with periodic scheduled monitoring of BMP performance and maintenance of BMP features. Consistent with NPDES requirements, the SWPPP includes a monitoring and reporting program that specifies inspections to be performed following implementation of the Project to ensure that BMPs are being successfully implemented and to identify conditions that may allow potential pollutants to be discharged with storm water and correct those conditions (see Table 6, p. 32 of Appendix I.4).

The performance of BMPs, including any related failures, improvements, and corrective actions taken as a result of periodic monitoring and reporting (see Section 13 of the Industrial SWPPP, Appendix I) would be described in annual regulatory reports submitted to the CCRWQCB. Monitoring and prescribing corrective actions, if needed, under the MRP would minimize or avoid potential impacts on surface water and groundwater quality and would include additional targeted monitoring to ensure successful resolution of identified problem areas if a water quality protection standard (WQPS) exceedance is determined to have occurred under the MRP.

Contaminants and hazardous chemicals used in the proposed mining operations and during the reclamation phase would include vehicle fuel, oils, and lubricants, as well as solvents, acids, bases, batteries, antifreeze, heavy metals, and pesticides. The materials have the potential to spill during regular use, which could result in contaminated runoff from the site if spills are not properly contained and/or cleaned up. Vehicle refueling and service operations would occur at the designated maintenance shop within the processing plant area. Fueling and oil storage tanks would be set inside secondary containment structures to contain leaks and spills, and a Hazardous Material Business Plan and Spill Prevention Control Counter Measure Plan are included in the

Project (see Section 3.9, *Hazards and Hazardous Materials*), which would provide emergency and spill response procedures. In addition, as discussed above, implementation of the SWPPP requires inclusion of numerous BMPs related to the storage, processing and handling of aggregate materials and hazardous materials, maintenance of vehicles and equipment, and good housekeeping procedures for the processing plant area.

Water quality impacts are assessed in more detail below for specific Project elements, including consideration of the Project's proposed storm drainage plan (see Project Description Section 2.4.3, *Stormwater Drainage*, for the operational phase, and Section 2.6.3, *Erosion, and Sediment Controls*, for the reclamation phase for details) and proposed erosion and sediment control features (Section 2.4.4).

Operation

Mining Pits

Active mining areas would be graded to achieve positive drainage consistent with the performance standards contained in SMARA's implementing regulations for drainage and diversion (Appendix B), as described in detail in Section 2.4.4. Runoff from precipitation falling within the mining areas generally would drain into the quarry pit via a drainage system and be conveyed to stormwater retention and sedimentation basins within the mining pits (Figure 2-15 in Chapter 2, *Project Description*). Drainage improvements, including sediment basins and stormwater collection and conveyance systems, would be designed to accommodate the 24-hour, 100-year storm event.

Runoff from quarried slopes and benches would always be directed down to the quarry floor through drainage ditches that would be maintained during mining and relocated as mining moves into new areas. After final grading configuration of each bench has been achieved, runoff from the quarry slopes would be directed into interceptor ditches on the benches and proceed into drop inlets flowing into over side drain culverts. Each bench would be constructed with a minimum 4 percent back slope to prevent runoff from flowing over the quarried slopes and eroding exposed soils. Runoff from the quarry slopes would be directed into interceptor ditches on the benches or at the toe of the quarry slopes and then into either side collector ditches or a lined ditch that conveys stormwater to the basins. The collector, interceptor ditches, drop inlets, and over side drain culverts would be constructed after the final reclamation grading configuration of each bench has been achieved. The benches would minimize the chance of slope erosion or weakening of the slope resulting from runoff saturation (Appendix B).

The stormwater basins in the mining area pits would be constructed to capture sediment-laden water collected within the mining area and allow the sediment to settle out. The Applicant would expand the sediment pond with each new mining phase to accommodate the increased mining area, as necessary. Energy dissipaters would be located at the base of the slope where the runoff would flow into ditches that drain into the pit and basins. Runoff from the quarry slopes would join runoff from the quarry floor in the pit and basins. The basins would be sized such that stormwater generated on-site would be retained without discharge; the basins would retain stormwater until it percolates into the ground. Prior to each wet season, the quarry operator would remove sediment from the pond to ensure sufficient retention capacity is available and to facilitate percolation, ensuring the pond would be prepared to receive runoff and sediment for the subsequent winter season. Surface runoff and drainage from surface mining areas, would be controlled by berms, silt fences, sediment ponds, revegetation, hay bales, or other erosion control measures, consistent with the SWPPP, to avoid and minimize erosion, gullying, sedimentation, and contamination of receiving waters from exposed soils and activities related to operation and reclamation consistent with the identified proposed activity areas and the specific pollutants associated with those activities (Table 3.10-1). Erosion control methods would be sized to accommodate runoff from not less than the 20-year/1-hour intensity storm event consistent with regulatory requirements (see Section 2.4.4).

Processing Plant

The processing plant is proposed to be located just south of Tar Creek. Stormwater runoff from the processing plant site would be contained on-site via a stormwater collection and conveyance system designed to address stormwater transport of the specific pollutants associated with proposed processing plant site activities (Table 3.10-1). Stormwater from the site would be collected and conveyed to the on-site stormwater sediment basin through graded brow ditches constructed adjacent to the access road, along the perimeter and within the interior areas of the site (Figure 2-15). Stormwater in this basin would be allowed to percolate on-site or be reused to supplement supply to the process water pond for processing plant operations (e.g., dust control, washing aggregate materials). The process water pond would be supplied via a new groundwater well (assessed under Impacts 3.10-3 and 3.10-5). The on-site sediment basin would also receive runoff from swales surrounding the adjacent overburden stockpiles. The sediment basin would be approximately 0.21 acre (surface area) and have a capacity of 0.45 acre-foot in order to accommodate the 24-hour, 100-year storm event.

Stockpiles at the processing plant would be stabilized, consistent with the SWPPP (Appendix I.1), to minimize and/or avoid erosion and transport of sediments in stormwater that may contribute to silt build-up in the sediment basin. Temporary erosion control BMPs to control erosion on the stockpiles during the rainy season include surrounding the stockpiles with devices such as coir wattles or silt fences and/or constructing drainage ditches that collect stormwater from the stockpiles and direct the flow into one of the proposed Project site sediment basins. Topsoil stockpiles that would not be used in the near-term would be hydro seeded to establish vegetative cover to minimize the potential for erosion of exposed soils. Additionally, an approximately 40-foot-tall visual screening berm would be constructed along the east side of the processing plant, adjacent to U.S. 101 (Figure 2-5a). The berm would be constructed using approximately 90,000 cubic yards (cy) of overburden from Phase 1. The berm would be graded to resemble the form and shape of the surrounding hill and would be planted with shrubs, grasses, and trees and irrigated so as to establish vegetative cover to stabilize exposed soils and minimize erosion and off-site sediment transport in stormwater.

To access the proposed processing plant, a bridge over Tar Creek would be constructed along with flood protection berms along both sides of the creek within the existing 100-year flood limits of the creek. Hydrologic and water quality impacts associated with the proposed Tar Creek Bridge and flood protection berms are assessed under Impact 3.10-8.

Conveyor Belt, Rail Spur, Access Roads

For facilities like the Project, unpaved access roads, rail spurs, and other facilities such as the conveyor belt are considered to be part of the industrial activity and are subject to the requirements of the NPDES Industrial Permit. As a result, stormwater runoff and associated pollutants from the active site must be managed and controlled with BMPs. Following construction of the Project site access roads, conveyor belt, and rail spur, erosion and sedimentation, as well as the transport of other pollutants (such as oil and grease) would be controlled through implementation of the BMPs specified in the SWPPP (Appendix I.4) associated with the Industrial NPDES Permit. Such BMPs include the use of water trucks to spray unpaved and paved roads, restriction of activities during wet weather, routine inspection of the access roads for erosion and/or spills, the expansion of drainage facilities and sedimentation basins (as needed), and the use of jute matting, erosion control blankets, wattles, silt fences and sediment traps to mitigate areas where runoff is concentrated to reduce sediment levels in site runoff.

As part of the proposed stormwater drainage system (Section 2.4.3) and the proposed erosion and sediment controls (Section 2.4.4), eight sediment and drainage control basins would be located intermittently along the conveyor belt/access road alignment (Figure 2-9 and Figure 2-10). These basins would have surface areas ranging from 0.01 to 0.34 acres and capacities of 0.01 to 1.45 acre-feet. The sediment basins would receive all surface water from the conveyor belt/access road alignment and capture sediment and other pollutants transported in stormwater to ensure water quality is not degraded in downstream receiving waters. Prior to each wet season, the Applicant would remove accumulated sediment from the sediment basins. The sediment basins would capture pollutants in runoff from active industrial areas and avoid direct discharges of stormwater to on-site or downgradient receiving waters such as Sargent Creek or the Pajaro River.

For the reasons discussed above, the operational impacts of the Project would be **less than significant**.

Reclamation

As described in Section 2.6, reclamation activities would involve equipment and building removal, regrading, re-soiling, installation of drainage and erosion control, and revegetation of exposed soils. The Tar Creek bridge and the access road that runs parallel to the conveyor belt would be left in place, but the Sargent Creek crossing would be removed, and the Sargent Creek channel would be restored to its natural pre-project condition. Residual fuels and oils would be removed from the site during reclamation activities. As described for construction (Impact 3.10-1) and operational activities (above), reclamation activities could subject soil, either stockpiled or otherwise exposed, to erosion by stormwater runoff and result in the transport of sediment or other pollutants on-site (such as oil or grease) to downstream receiving waters.

The Industrial SWPPP developed for the Project (Appendix I.4), including implementation of BMPs, monitoring and reporting, and corrective actions, would apply to operation phase and reclamation phase activities until reclamation is complete. In addition to the minimization and avoidance measures specified for implementation under the SWPPP, the Reclamation Plan (Appendix B) includes reclamation standards and BMPs that would be implemented in addition to those specified in the SWPPP and that are specifically designed to address erosion, sediment transport, and the contribution of pollutants to stormwater or downgradient receiving waters.

The Reclamation Plan includes specific standards and BMPs related to re-soiling, back filling, grading, slope stabilization, removal of structures and equipment, control of contaminants, erosion and sedimentation, and the protection of on-site and downstream beneficial uses of water (see Section 4.5 of Appendix B). Erosion and sediment control measures to be implemented during the reclamation phases of the project would include revegetation of disturbed slopes, benches, and valley floor areas. The implementation of BMPs, such as jute matting, erosion control blankets, wattles, silt fences and sediment traps, would ensure areas where runoff is concentrated are managed such that erosion and the transport of sediment or other pollutants in the runoff is avoided or minimized. Implementation of BMPs would ensure downgradient receiving water quality is not degraded prior to completion of restoration.

Reclamation activities would be monitored to ensure that reclamation of the site is done in compliance with the approved Mining and Reclamation Plan. The monitoring program incorporates site-specific criteria to measure compliance for specific reclamation activities including grading/topography, sediment and erosion control, revegetation, irrigation, and ongoing maintenance and monitoring. BMPs included in the monitoring and maintenance plan for reclamation activities include:

- Use of a water truck to wet down work areas while filling and compacting is underway or while the ground surface is being ripped or disked and while topsoil is being spread onto the reclaimed slopes, benches, and valley floor;
- The lining of drainage ditches comprised of loose soils with rock to reduce erosion;
- Inspection and repair of rill erosion either by regrading the area or by adding erosion control measures to reduce the concentration of water causing the erosion;
- Inspection of drainage facilities annually prior to wet season; and
- Inspection of revegetated slopes prior to September 1st each year for five consecutive years following the conclusion of mining operations to ensure that the plant materials have successfully become established and are properly functioning to hold the soil on graded slopes, reducing the potential for erosion (consistent with SMARA and County Use Permit requirements).

These measures would ensure that reclamation activities have a **less-than-significant impact** on water quality.

Summary

Surface runoff and drainage, including pollutants transported in stormwater, from surface mining areas and other active industrial areas would be controlled by stormwater drainage channels, swales, berms, silt fences, sediment 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.

The combination of planned drainage, revegetation improvements, and management of active mining areas and stockpiles, as well as routine inspection, monitoring, and implementation of corrective actions, such as rill repair or expansion/repair of drainage systems, would control erosion and the transport of sediment or other pollutants in stormwater during mining and reclamation phases. Erosion control methods would be designed to handle runoff from not less than the 1-hour, 20-year intensity storm event. Sediment basins proposed in the mining pits would be designed to accommodate the 24-hour, 100-year storm event and be sized sufficiently such that no discharge of stormwater off-site to Sargent Creek or other receiving waters from mining areas occurs. Implementation of the measures contained in the Hazardous Material Business Plan and Spill Prevention Control Counter Measure Plan (see Section 3.9, *Hazards and Hazardous Materials*) would further reduce potential water quality impacts associated with hazardous materials and other potential pollutants associated with industrial activities. Consistent with the SWPPP (Appendix I.4) and the Reclamation Plan (Appendix B), any necessary erosion control measures and expansion, maintenance, or repairs of drainage control facilities needed to prevent erosion or degradation of downgradient receiving waters would be completed each year prior to the start of the rainy season.

Compliance with the requirements of the NPDES Industrial Permit, including the implementation of associated BMPs as part of the SWPPP, as well as the requirements of SMARA and County Use Permit related to mining and reclamation, would prevent the discharge of pollutants to surface waters or groundwater and minimize or eliminate degradation of surface water or groundwater quality during operation and reclamation of the Project. Impacts relating to the violation of water quality standards, waste discharge requirements, or the degradation of surface and/or groundwater quality due to operation and reclamation of the proposed Project would therefore be **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant

Impact 3.10-3: The Project would not substantially decrease groundwater supplies through affecting groundwater quality such that the Project may impede sustainable groundwater management of the basin. (Less than Significant)

This impact discussion corresponds to Significance Criterion (b) (see Section 3.10.4.2) and addresses whether the Project would substantially decrease groundwater supplies by adversely affecting groundwater quality such that the Project may impede sustainable groundwater management of the basin.

Construction

Project construction would not require deep excavation, because the processing plant and other facilities would be at grade, and no basements or deep utility lines would be installed. Therefore, construction activities would not affect groundwater, and there would be **no impact**.

Operation and Reclamation

Mining

Groundwater appears to occur beneath the Project site as a shallow groundwater table and also may be perched in fractures and granular landslide deposits. Surface features (spring and riparian areas) and groundwater seepage encountered above the maximum depth of mining in five exploratory soil borings in the Phases 1 and 2 pits suggest a shallow groundwater table. Groundwater would enter the mining pits as seepage where the pits extend below the elevation of the water table or the perched water. This condition would likely occur in the Phases 1 and 2 pit because, unlike Phase 3 and 4, this pit would be a closed depression that could not be configured to drain by gravity to a nearby stream. Groundwater seepage and surface runoff into the pit would accumulate until it is balanced by evaporation, evapotranspiration, and groundwater outflow (Appendix I.2). Substantial volumes of groundwater accumulation in the Phases 3 and 4 pits would be unlikely because groundwater is deeper, as evidenced by the absence of seepage in the exploratory borings drilled in this area (SGS 2017). If seepage from perched water emanated from the western slope of the Phase 3 pit, it would likely be captured by the drainage swale that is proposed along the 300-foot elevation contour of the west quarry slope.

The Reclamation Plan prescribes actions that would be implemented if the groundwater seepage from the water table or perched groundwater accumulates in the mining pits and wet mining techniques (see Mining Below the Groundwater Table in Section 2.4.1, *Overview*) would be required. Wet mining techniques would involve a dragline crane or excavator that would retrieve harvested sand and gravel material from below the water that accumulates on the mining pit floor to a depth of 45 feet. Deadman-pulley systems would be used to harvest sand and gravel from approximately 45 to 90 feet below the water surface.

Wet mining techniques could expose the accumulated groundwater to potential water quality degradation and evaporation. The use of heavy equipment (e.g., dragline cranes and excavators) could increase the potential for residual grease, hydraulic oils, and fuel from the equipment to be introduced into the groundwater. Groundwater containing oils and grease, or other chemicals could percolate through the mining pit to eventually reenter the shallow groundwater table that flows out to the Pajaro River. Disturbance of the sediments below the water surface could cause high turbidity that would increase the concentration of total suspended solids (TSS) and total dissolved solids (TDS). Groundwater accumulated in the mining pits would be exposed to evaporation during mining and throughout reclamation, which could, over time, substantially reduce the volume of groundwater that would otherwise flow to the Pajaro River to recharge the Llagas Subbasin.

The potential for long term degradation and evaporation of the shallow groundwater wet mining techniques is low because the Project proposes BMPs to minimize surface water contamination and reduce evaporation. Chapter 7 of the Industrial SWPPP prepared for the Project identifies potential pollutants and several BMPs that would be implemented during work in the mining pit to minimize the potential for petroleum-based contaminants from entering the water within the mining pits (Appendix I.4). Examples of these BMPs include:

- All heavy earth moving quarry equipment requiring major rebuilding would be repaired off-site.
- All heavy earth moving quarry equipment requiring routine maintenance would be serviced by the mobile field truck, which follows good housekeeping practices and BMPs, including carrying absorbents, absorbent pads and drip pans.
- Leaks from vehicles would be promptly repaired; and drip pans and absorbent materials used, as needed, temporarily until leakage is repaired.
- Spill kits would be available at all service areas.
- Hazardous materials and fuels would be stored in designated areas with secondary containment.

Standing water in the pits that is disturbed by drag line mining would become turbid and could increase the sediment load in the water column. However, the sediment suspended in the pit water would eventually settle out to the pit bottom and would not reenter the groundwater system. Ponded groundwater that remains in the pits following mining and reclamation would be covered with at least 20 feet of overburden or other imported fill to bury and cap the groundwater, so no long-term evaporation occurs (see Section 2.4.1, *Overview*).

In summary, if mining operations intersect the shallow water table or perched groundwater and mining below the groundwater is required, the implementation of BMPs would reduce the potential for water quality degradation and covering ponded water with overburden would reduce evaporation. Therefore, this impact would be **less than significant.**

Access Roads, Processing Plant, Conveyor Belt, Rail Spur

Subsurface activities would be limited to mining activities in Phase 1 pits. Therefore, there would be **no impact** on groundwater from these components.

Mitigation: None required.

Significance after Mitigation: Less than significant

Impact 3.10-4: Project activities would not have an adverse impact on groundwater production in local groundwater wells. (Less than Significant)

This impact discussion corresponds to Significance Criterion (b) (see Section 3.10.4.2) and addresses whether the Project would substantially decrease groundwater supplies such that it would adversely affect local well production.

Construction

Project construction, which is expected to require 9 months to complete, would use water for dust suppression. The amount of water used on a daily basis during the temporary construction period would only be a fraction of that required daily by Project operations (see Chapter 2, *Project*

Description, Table 2-4). Operations include aggregate washing (76,800 gallons), processing plant dust suppression (155,000 gallons), access/maintenance road dust suppression (3,000 gallons) and mining area dust suppression (3,000 gallons). As discussed below, the amount of groundwater pumping during operation would not substantially alter operation of other local wells, so the impacts on groundwater production due to the temporary use of groundwater during construction activities would be **less than significant**.

Operation and Reclamation

Mining

The mining areas are elevated hillsides, and the proposed quarry pits are not located within identified groundwater recharge basins. During mining, rainwater would be captured within the mining areas and allowed to percolate into soils (as described in Section 3.4, *Biological Resources*). Drainage from outside the mining areas would percolate into the ground and would be directed to area creeks. Changes in groundwater flow in the mining pit areas would be roughly proportional to the depth of the pit and area of disturbance. Thus, groundwater flows in the mining areas would tend to increase incrementally throughout the period of active mining, and the post-mining changes would be similar to those at the end of the active mining period.

Given the limited change to percolation patterns overall, the impact to area wells as a result of mining activities would be negligible. As the quarry pits are not connected to groundwater basins (see Section 3.10.3.1), quarrying activities would have a **less-than-significant impact** on groundwater production at wells in the vicinity of the Project site.

Access Roads, Processing Plant, Conveyor Belt, Rail Spur

Subsurface activities would be limited to mining activities in Phase 1 pits (discussed below). However, Project operation would require groundwater for processing and dust control. The Project would be supplied by a well near the processing plant, west of the railroad tracks and south of the U.S. 101 overpass. Pumping would cause a drawdown (lowering) of groundwater levels near the well. Drawdown would decrease with distance from a pumping well, but a large decline in water level could potentially impact the operation or yield of affected nearby wells. For this analysis, the amount of drawdown has been estimated based on the pumping rate of the Project well, the distance to the nearby well, and the hydraulic characteristics of the aquifer.

As discussed above in Section 3.10.3.3, *Groundwater Resources*, there are several other groundwater production wells in the vicinity of the Project site. The closest wells belong to the Applicant, Valley Water, and a neighboring landowner (Sun and Sons LP). The Sun and Sons LP well is the closest (690 feet away) privately owned irrigation supply well to the Project site. These wells could all experience water level decline due to Project pumping.

The annual water production from the Project supply well would be 82.3 acre-feet per year (AFY). Most of the water would be used for aggregate washing, and groundwater extraction for that purpose would be proportional to the rate of processing. Although processing could vary from year to year, it is assumed for this analysis to occur at a constant rate throughout the 30-year mining period.[8] Within a given year, water use would occur almost exclusively during the 310 days that the plant operates. Wells are generally constructed to produce a target volume operating 50 percent of the time or less. Assuming a 12-hour-on, 12-hour-off pumping cycle during plant operation days, the pumping rate of the well would be 120 gpm.

When a production well is pumping, it draws the water down in a radial area around the well forming what is referred to as a cone of depression (used synonymously herein with drawdown cone). The formation of this drawdown cone is a function of time and distance, which can be estimated mathematically. Key parameters in the equation are aquifer transmissivity[9] and storativity.[10] Estimates of those characteristics were obtained from a calibrated regional groundwater flow model, which determined that drawdown at the Sun and Sons LP irrigation well, at the end of the 12-hour pumping cycle, is estimated to be 0.8 to 4.0 feet. A repeating sequence of pumping cycles results in slightly greater drawdown and the estimated drawdown at the end of the 12-hour pumping cycle the fifth day would be 0.9 to 5.6 feet.

In large groundwater basins shared by many users, it is normal for the cones of depression that form at individual wells to intersect those at neighboring wells; most or all wells routinely cause drawdown at neighboring wells. Drawdown caused by a new neighboring well would not cause a significant groundwater impact unless it would cause pumping water levels to drop below the top of the well screen.[11] When that occurs, water can cascade into the well, entraining air and creating a risk of cavitation inside the pump (bubbles generated by low pressure). This can damage the pump, resulting in a costly repair and interruption of water supply (Appendix I.2).

Well construction information is not available for the private (Sun and Sons LP) irrigation well closest to the Project's proposed supply well. However, drillers' logs for other wells in the area indicate that a typical depth to the top of the well screen is 100 feet and a typical total well depth is 400 feet. Groundwater level data from the Valley Water monitoring well during 2012–2015 indicate that water levels recovered during the winter each year to 9 feet below ground surface, which probably corresponds to the elevation of the nearby Pajaro River. In summer, water levels declined to 25 feet below ground surface in 2012 (normal year) and 45 feet below ground surface in 2014 and 2015 (critical dry years). Thus, the lowest static (non-pumping) water level in a dry year was 55 feet above the top of the screen.

During pumping, water levels drop below the static water level by an amount proportional to the specific capacity[12] of the well. Specific capacity data are not available for the potentially impacted Sun and Sons, LP irrigation well, but the relatively close spacing of the neighbor's

[8] This analysis applies the proposed constant pumping rate rather than the peak annual use because the constant rate better reflects groundwater extraction rates for the analysis of drawdown. This approach is consistent with that applied by Todd Groundwater (Appendix I.2).

[9] Transmissivity is the rate at which water is transmitted through the water-bearing sediments or rocks (Wilson and Moore 1998)

[10] Storativity is the amount of groundwater in water bearing sediment or rocks releases or takes into to storage (Ibid.)

[11] The well screen is that section of well casing that is perforated to allow water to enter the well from the water-bearing strata (sediments or rock). The well screen extends horizontally across the thickness of the strata while a solid, non-perforated casing extends across strata that is not water bearing.

[12] Specific capacity is the expression of the productivity of a well obtained by dividing the rate of discharge (pumping rate) by the drawdown of a well.

irrigation wells suggests that they have relatively low yields. Based on other wells in the region for which data are available, reasonable estimates of pumping rate and specific capacity might be 400 gpm and 10 gallons per minute per foot of drawdown, respectively. Those values indicate a pumping drawdown of 40 feet. Combining that drawdown with 1 to 6 feet of drawdown from the Project well would still leave 9 to 14 feet of water above the top of the well screen at the end of the irrigation season in a dry year. Therefore, the drawdown impact would be **less than significant**. Because drawdown decreases with distance, it would also be less than significant at the other nearby production wells belonging to the Applicant, Valley Water, and Sun and Sons LP (see Section 3.10.3.3).

Mitigation: None required.

Significance after Mitigation: Less than significant

Impact 3.10-5: The Project would not substantially increase regional consumptive use of groundwater or reduce recharge, thereby decreasing availability of groundwater. (Less than Significant)

This impact discussion corresponds to Significance Criterion (b) (see Section 3.10.4.2) and addresses whether the Project would substantially decrease groundwater supplies.

Construction

Project construction would use water for dust suppression. The amount of water used daily during the temporary construction period would only be a fraction of that required daily by Project operations (see Chapter 2, *Project Description*, Table 2-4). Operations include aggregate washing (76,800 gallons), processing plant dust suppression (155,000 gallons), access/maintenance road dust suppression (3,000 gallons) and mining area dust suppression (3,000 gallons). As discussed below, the amount of groundwater pumping during operation would not substantially alter operation of other local wells, so the impacts associated with increased regional consumptive use during construction activities would be **less than significant**.

Operation and Reclamation

Mining Pits, Access Roads, Processing Plant, Conveyor Belt, Rail Spur

Consumptive use refers to the amount of applied water used and not available for reuse as a source of supply. It includes water that evaporates, transpires, or is incorporated into products, plant tissue, or animal tissue (DWR 2021). Effects on the regional groundwater balance and on groundwater availability to other users depend on the net result of changes in recharge[13] and consumptive water use by the Project. Consumptive use would change only during the mining period, but recharge would change during and after the mining period. Consumptive use of groundwater would increase during the 30-year mining period by approximately 83 AFY, which is the projected annual volume of water extracted from the Project supply well. During Project

[13] Recharge refers to the replenishment of groundwater bearing strata through infiltration of surface water.

operation, recharge may increase slightly because existing grass and trees would be replaced by mining pit walls consisting of bare rock and soil, reduced plant evapotranspiration,[14] and rainfall runoff captured in the pits would infiltrate, especially as the pits reach their full size. While it may be the case that recharge could increase during the operation of the Project, this analysis conservatively assumes that recharge would remain unchanged, and that regional groundwater consumptive use would increase by 83 AFY.

Because the Project supply well is next to a perennial[15] reach of the Pajaro River, where the river receives flow from groundwater discharge from the Bolsa and Llagas subbasins, the pumping would tend to deplete river flow, up to a rate equal to the average annual pumping rate (83 AFY). Groundwater users in the Llagas Subbasin in Santa Clara County and the Bolsa and San Juan Valley subbasins in San Benito County would be unaffected from a water balance standpoint because they are upgradient of the Project well and impacted river reach. Water users most likely to be affected would be downstream in the Pajaro Valley near Watsonville, where groundwater pumping averaged 52,000 AFY during 2009–2013 (Appendix I.2). If all consumptive use at the Project site was considered a reduction in river percolation and groundwater recharge in the Pajaro Valley (rather than a decrease in outflow to the ocean), it would amount to approximately 0.2 percent of total Pajaro Valley pumping. At that magnitude of change, Project groundwater pumping would result in a minor increase to regional consumptive use, and downstream water demand could still be met. Therefore, this impact would be **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant

Impact 3.10-6: The Project would not impede sustainable groundwater management of a groundwater basin. (Less than Significant)

Construction

Project construction would use water for dust suppression. The amount of water used on a daily or annual basis would be substantially less than required by Project operation. As discussed below, the amount of groundwater pumping during operation would not substantially alter operation of other local wells and thus would not adversely affect the management of the groundwater basin. Therefore, this impact would be **less than significant**.

Operation and Reclamation

Mining, Access Roads, Processing Plant, Conveyor Belt, Rail Spur

The annual water production from the Project supply well would be approximately 83 AFY. Although processing could vary from year to year, it is assumed for this analysis to occur at a

[14] Evapotranspiration refers to the loss of water from a land area Water that is transpired by plants during photosynthesis.

[15] Refers to a stream that flows throughout the year.

constant rate throughout the mining period.[16] The Project supply well would be located at the downgradient tip of the Llagas Subbasin, which is the Santa Clara County part of the Gilroy-Hollister Groundwater Basin. Because of this location and the proximity to a perennial reach of the Pajaro River, the primary effects of Project pumping on basin yield would accrue to downstream groundwater users by means of changes in river percolation. The primary downstream water user group is groundwater pumpers in the Corralitos Basin located on the coastal plain surrounding Watsonville. River percolation supplies approximately 30 percent of average annual recharge to the Corralitos Basin. The consumptive use for Project operation of 83 AFY would amount to 0.2 percent of the average annual groundwater pumping in the PVWMA area and would be negligible in the context of other much larger sources of variability (Appendix I.2). The change in post-mining net consumptive use due to changes in vegetation in the pits and along downstream reaches of Sargent Creek would be similarly small, especially considering that no substantial impervious area is proposed.[17] Therefore overall infiltration of water into soils below would not substantially change. Furthermore, approval of the Project groundwater well would require confirmation from Valley Water, as the Groundwater Sustainability Agency, that the well would not be inconsistent with the groundwater management plan, per Executive Order N-7-22. The Project would therefore not substantially reduce groundwater supplies or impede sustainable groundwater management of the basin, and the localized impact would be **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant

Impact 3.10-7: The Project would not substantially alter existing drainage patterns in a manner that would result in substantial erosion or siltation on or off site, increased runoff, or adverse impacts on water quality or related to flood flows. (Less than Significant)

This impact discussion corresponds to Significance Criteria (c[i–iv]) (see Section 3.10.4.2) and addresses whether the Project would substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation on or off site, increased runoff, or adverse impacts on water quality or related to flood flows.

Construction

Water quality impacts, including those associated with erosion and sedimentation of on- and off-site receiving waters due to stormwater runoff, would be **less than significant** for construction activities associated with the proposed processing plant, mining areas, overburden stockpile area, access road improvements, conveyor belt, and rail spur for the following reasons. As described

[16] The groundwater analysis for this impact (Appendix I.2) applied the proposed constant pumping rate rather than the peak annual use because, while not an average, the constant rate better reflects groundwater extraction rates for the analysis of drawdown.

[17] The processing plant and access roads would create some ground area that may restrict surface water infiltration and ultimately groundwater recharge but the total area of these facilities represent only a small fraction of the total area available to recharge and thus would affect recharge only negligibly if at all.

under Impact 3.10-1, above, implementing actions and BMPs required under the Construction General Permit, as well as proposed measures outlined in Chapter 2, *Project Description*, relating to stormwater drainage (Section 2.4.3 and Section 2.6.5) and erosion control (Section 2.4.4), would prevent significant water quality impacts related to erosion and the transport of sediment in stormwater associated with construction activities.

Operation

Processing Plant, Conveyor Belt, Rail Spur, and Access Roads

Water quality impacts, including those associated with erosion and sedimentation of on- and off-site receiving waters due to stormwater runoff, would be less than significant for the proposed processing plant, mining areas, overburden stockpile area, access road improvements, conveyor belt, and rail spur, because as described under Impact 3.10-2, above, implementing actions and BMPs required under the NPDES Industrial Permit and associated industrial operations SWPPP (Appendix I.4), as well as proposed measures outlined in Chapter 2, *Project Description*, relating to stormwater drainage (Section 2.4.3 and Section 2.6.5) and erosion control (Section 2.4.4), would prevent significant water quality impacts related to erosion and the transport of sediments in stormwater associated with operation activities, with the exception of the realignment of drainage channels in the mining areas and at the creek crossings (assessed in detail below).

Proposed Drainage Alterations (Tar Creek Crossing, Mining Phases 1-4, and Sargent Creek Crossing)

Realigning existing ephemeral drainage channels within the watershed, routing surface waters through culverts, and altering creek channels are proposed as part of the Project to route stormwater flows from upgradient watershed areas around active mining phases and increase site access and safety (Figure 2-15). Such realignments and channel alterations are proposed for the proposed bridge over Tar Creek (Figure 2-13) and flood plain realignment berms (Figure 2-14), the Sargent Creek access road crossing (see figure on p. 9 of Appendix I.1), and the channels and culverts designed to reroute drainages associated with mining Phase 2/Permanent Overburden Stockpile Area (Figure 2-16) and Mining Phase 3 (Figure 2-17). Altering drainage patterns such that channels follow a new course or are conveyed through culverts or narrowed channels, could concentrate flows from off-site or upgradient areas and result in an increase in flow depth and/or flow velocity in on-site or downstream watercourses. Increased depth and velocity within realigned channels or at the downstream discharge point of culverts and road crossings could increase the potential for the channel bed and bank to erode and mobilize bed and bank sediments. If the increase in velocity is large enough and ample sediment is available for transport, the resultant bed/bank erosion and increase in sediment transport could be substantial, negatively impacting both channel stability and water quality on-site and downstream.

The Flood and Drainage Analysis (Drainage Study) prepared for the Project (Appendix I.1) included a detailed review of the hydrologic characteristics of the Project site. Model analyses were conducted to quantify changes to runoff rates and flood limits from implementation of the Project and to provide design recommendations for the proposed drainage improvements to safely convey stormwater and flood flows without resulting in significant impacts relating to scour, sediment transport and water quality. The model results were incorporated into the engineering design for the proposed creek crossings, culverts, channel realignments, and flood berms. The resulting proposed stormwater management system comprises of a network of swales, inlet controls, energy dissipation structures, and erosion control features to prevent erosion and scour of channel bed/bank, facilitate infiltration, and attenuate peak runoff rates in a manner that mimics pre-development hydrologic conditions at the Project site for downgradient receiving waters.

Sutro Science, the County's environmental consultant, independently reviewed the hydrologic study for accuracy and to verify that methodologies and assumptions employed were appropriate and that the results were valid (Sutro Science 2020). Where applicable, the results and findings of the hydrologic study are incorporated into the analysis of the Project's potential environmental impacts. Discussed below is a summary of the model analysis methodology and assumptions employed for the Drainage Study followed by an assessment of the Project's environmental impacts for each of the proposed elements based on the Drainage Study results.

Methodology and Assumptions

Hydrologic analysis included Sargent Creek and Tar Creek in the vicinity of the described drainage improvements and creek crossings, as well as at locations where other smaller drainage areas contribute flows that enter the proposed Project site. All the proposed conveyance structures and creek crossings were designed to safely convey flows associated with the 100-year storm event. As described in Section 3.10.3.2, *Surface Water Resources*, an impoundment of Sargent Creek exists about 2,000 feet upstream of the proposed Phase 3 and Phase 4 quarry access road that crosses Sargent Creek. This impoundment entirely retains normal season upstream flow. As a result, there is no flow within Sargent Creek downstream of the impoundment for much of the year, except when flows south of the impoundment are contributed directly to the creek via sheet flow or from smaller ephemeral drainage channels that flow into Sargent Creek downstream of the impoundment. The model analysis conducted for the Drainage Study assumed that the pond upstream of the impoundment was full and no additional storage capacity would be available. This assumption represents a worst-case (i.e., most conservative) scenario incorporating conditions for a100-year event conservatively occurring during an El Niño type wet winter where sufficient rain has fallen prior to the 100-year event to have filled the impoundment.

The Drainage Study analysis and design recommendations are consistent with the Santa Clara County Drainage Manual (drainage manual) (County of Santa Clara 2007), which requires a channel to be designed to safely convey a 10-year storm event with 1 foot of freeboard. The proposed Tar Creek bridge has been designed to convey the stormwater from the 100-year storm event (a larger storm than the 10-year event) safely under the bridge with 0.7 foot of freeboard (i.e., exceeding the requirements of the drainage manual). To estimate peak discharges, the Unit Hydrograph Method was used. WIN TR-55 software developed by the Natural Resources Conservation Service (NRCS) was used to determine runoff rates based on the SCS Curve Numbers. TR-55 is the standard model used for such assessments and can simulate a wide variety of surface conditions, land-use changes, and the subsequent effect on stormwater runoff rates, volumes, and storage capacity. TR-55 also is suitable for modelling complex drainage networks and stormwater management systems such as the one proposed as part of the Project.

Accurate hydrologic modelling requires rainfall characteristics that are representative of the study area. For stormwater control and mitigation, the storm duration and intensity for stormwater system design was determined from the Santa Clara County Mean Annual Precipitation Isohyets Map and Intensity-Duration-Frequency Curves (Appendix I.1). To design a system consistent with regulatory requirements, the model analysis included consideration of the rainfall depths and associated runoff from the 100-year, 24-hour storm (6.96 inches) to determine peak runoff rates and total volume generated during design storms.

The latest HEC-RAS version 5.0.7 software was used to model flows in Tar Creek and Sargent Creek. Cross-sections of the Tar Creek and Sargent Creek were imported from AutoCAD Civil 3D. Drainage design sizing was performed using the AutoCAD Hydroflow Express Extension, which utilizes Manning's Equation. The USGS 7.5-minute maps and Aerial Survey were used to determine the tributary watershed areas for the site. Tributary areas to Sargent and Tar Creeks were divided into smaller subareas (see Table 1 in Appendix I.1). All hydrologic calculations and further details regarding the model methodology are provided in the Drainage Study (Appendix I.1).

Tar Creek Bridge and Floodplain Realignment

The 100-year calculated flood limits of Tar Creek extend approximately 350 feet south into the proposed processing plant site (Figure 3B Appendix I.1). To prevent the flood limits from encroaching into the plant site, a 5-foot-high berm is proposed between the southern bank of Tar Creek and the boundary of the processing plant, and a 4-foot-high berm is proposed on the north side of Tar Creek to channel the flows under the proposed bridge (Figure 3C in Appendix I.1). The proposed berms would be armored against scour with rip-rap. The proposed Tar Creek bridge is located just north of the downstream terminus of Tar Creek.

Tar Creek Velocity Changes

The existing velocities in the vicinity of the proposed bridge vary from 2.5 to 3.6 feet per second with existing floodplain widths ranging from 500 feet to 800 feet. The model analysis determined that installation of the berms and the new flood plain boundary would decrease velocities by approximately 0.5 to 1.0 feet per second upstream of the bridge as compared to existing conditions. The reduction in velocities upstream of the bridge mean that the bridge would create a backwater during storm events exceeding a 5-year event. In the vicinity of the processing plant site (i.e., downstream of the bridge), the velocity would increase by 0.3 to 1.9 feet per second as compared to existing conditions. The proposed and existing velocities would be identical at the downstream limit of the plant before Tar Creek reaches the existing culvert under the railroad track and U.S. 101.

Flood Depth

Based on the Drainage Study analysis, the proposed floodplain realignment would affect the flood limits of Tar Creek and water surface elevations associated with the 100-year event only in the vicinity of the plant. The existing 100-year water surface elevations vary from 162.7 feet msl to 158.9 feet msl flowing approximately 2 to 3 feet deep at the northern edge of the proposed plant site. Installation of the berms and the new flood plain boundary would result in an increase of water surface elevation by about 0.8 to 1.0 feet for a distance of 300 feet upstream of the bridge.

The depth of flow along the berm protecting the processing plant site would be 3 feet, leaving approximately 2 feet of freeboard to the top of the berm. At 300 feet upstream of the bridge, the 100-year water surface elevation would be 0.6 feet higher than the existing elevation, and at 700 feet upstream, the proposed and existing water surface elevation would be identical. There are no developed structures upstream of the plant. In the vicinity of the processing plant site (i.e., downstream of the bridge) the water surface elevation would rise by approximately 0.2 to 1.1 feet as compared to existing conditions. The proposed and existing water surface elevations would be identical at the downstream limit of the plant, upstream of where Tar Creek reaches the existing culvert under the railroad track and U.S. 101. The bridge and associated access road would be constructed above the 100-year flood elevation. The bridge is designed to convey the 100-year flood flow with 0.7 feet of freeboard, exceeding the drainage manual requirement that the 10-year event (a smaller event) must be conveyed with 1 foot of freeboard.

Tar Creek Scour, Sediment Transport, and Water Quality

Sediment transport analysis was performed for Tar Creek to determine the effect of the proposed floodplain realignment on water quality at the downstream end of the creek before the outfall to Carnadero Creek and, ultimately, the Pajaro River. Sediment transport was calculated in tons per day upstream and downstream of the proposed bridge where the bridge and berms would affect the width and depth of the floodway to the greatest degree. The pre- and post-development values are based on the average velocities, depth of flow, and width of the floodplain. The sediment transported by the floodway upstream of the bridge would decrease under the post-development conditions due to a decrease in velocities caused by the bridge constricting the floodway. Sediment transport would also decrease downstream of the bridge at the plant site due to the decrease in the width of the flood plain, which would reduce the scour surface area of the floodplain. By armoring the berms and bridge piers against scour, the sediment loading at those locations would be lessened, providing an additional reduction in floodway surface area from scour and sediment transport (**Table 3.10-2**).

TABLE 3.10-2
TAR CREEK SEDIMENT TRANSPORT FOR PRE- AND POST-DEVELOPMENT CONDITION

Attribute	Existing		Proposed	
	Upstream of Tar Creek Bridge	Downstream of Tar Creek Bridge	Upstream of Tar Creek Bridge	Downstream of Tar Creek Bridge
Average Width Floodplain (ft)	213	610	222	412
Average Depth of flow (ft)	11.7	10.7	11.7	11.0
Average Velocity (feet per second)	6.5	3.7	6.3	4.2
Sediment Transport (tons/ft/day)	707	158	671	222
Sediment Transport (tons/day)	150,261	96,444	148,787	91,355
Total Sediment Transport (tons/day)[1]	**247,000**		**240,000**	

NOTES:
1. Totals vary due to rounding.
SOURCE: Appendix I.1

A similar scour analysis was conducted for the proposed bridge abutments and piers to determine the necessary rip-rap reinforcement to prevent erosion of the channel bed and bank. Based on the calculations (Appendix I.1), the minimum size rip-rap reinforcement for the bridge piers required to prevent scour and erosion of the channel is 7-inch rock size placed to a thickness of 2-foot depth to a distance of 5 feet around the perimeter of each pier. As proposed, the Project would provide greater than the minimum necessary protection against scour: 12-inch rip rap would be used for 6 feet around the perimeter of each pier. The rip-rap reinforcement for the bridge abutments would consist of 12-inch rock placed at a thickness of 1.2 feet and extending 7.6 feet horizontally, 6 feet vertically, and 25 feet downstream of the abutments (see Section 4.2.1 in Appendix I.1 for engineering drawing). Due to the rip-rap placement along the berm protecting the quarry processing plant site, the post-development scour and sediment transport also would be reduced through the section of the creek where the berms are installed when a 5-year storm event or greater occurs. The storm events below a 5-year event would pass within the bridge span and stay in the creek bed without a change in scour between existing and proposed conditions.

Phase 1 and 2 Mining Area

The Phase 1 and 2 mining area would be located west of the proposed processing plant site. As described in Section 3.10.3.2, *Surface Water Resources*, there is an existing ephemeral drainage channel associated with the Phase 2 mining area. The existing channel is proposed to be rerouted around the perimeter of the Phase 2 mining area and through the Permanent Overburden Stockpile Area (Figure 2-16). Flows would be conveyed within a 36-inch culvert for a portion of the realignment. The culvert would extend southeast under the proposed access road and discharge at an existing natural drainage depression (i.e., the same downstream discharge point under pre-development conditions).

Based on the Drainage Study, 100-year flow within this drainage is 86 cubic feet per second (cfs) under pre-development conditions. The depth of flow would be 3 feet in the culvert. The flow through the culvert would be inlet controlled and the velocity in the culvert would be 12.4 feet per second. To address increased velocities at the culvert outlet and avoid scour of the channel bed and bank, a rock apron would be installed using 18-inch rock in a layer 2 feet thick placed for 25 feet downstream of the outlet or twice the depth of flow. The rock would protrude above the flowline of the channel to dissipate the energy of the flow and reduce velocity downstream of the culvert the outflow. Therefore, increased velocities would not result in substantial erosion or scour of the bed or bank of the channel on-site or downstream.

Phase 3 and 4 Mining Areas

The Phase 3 and 4 mining areas are located in the southern portion of the mining site. No drainage channels are proposed for re-alignment for the Phase 4 pit (see Impact 3.10-2, above, for an assessment of impacts relating to stormwater drainage and erosion control during mining operations). As described in Section 3.10.3.2, *Surface Water Resources*, an ephemeral drainage channel that is tributary to Sargent Creek runs upland and through the Phase 3 area. As part of the Project, the channel section within the Phase 3 mining area would be realigned around the perimeter of the area into a new 12-foot-wide and 2-foot-deep swale that would run along several benches on the northern side of the Phase 3 mining area at an elevation of 300 feet msl. The proposed swale would discharge into an existing natural drainage swale on the east side of the mining area and continue under the access road via three 36-inch culverts, which would discharge into Sargent Creek just upstream of the location of the existing drainage swale discharge point into Sargent Creek (Figure 2-17).

A drainage area totaling 75 acres is tributary to the northwest portion of ephemeral channel upgradient of Phase 3. The 100-year flow is 186 cfs, according to the Drainage Study. Based on the model analysis presented in the Drainage Study, the proposed culvert outfall would not modify flow conditions in Sargent Creek from existing conditions in terms of flow depth or velocity for the 100-year event. As described for Phase 2 and Sargent Creek crossing, above, the outfall into Sargent Creek would be armored to protect the channel bed and bank against scour and erosion and a rip-rap apron would extend 25 feet downstream or for a distance two times the depth of flow with a calculated depth of flow in the culvert of 3 feet.

Sargent Creek Crossing

An arch culvert crossing is proposed for the access road connecting Phases 3 and 4 over Sargent Creek (Figure 2-10) to safely convey the flow for the 100-year intensity storm. The culvert would span the creek bed, leaving the channel bottom undisturbed, to convey flows in a more natural manner than a fully closed conduit (see engineering drawing in Section 4.1 of Appendix I.1). A low-profile culvert is proposed with a 35-foot span over the Sargent Creek natural channel bed and an 11-foot rise. Sargent Creek hydrologic characteristics were modeled from the northern upstream end of the creek to approximately 11,800 feet to the south for the pre- and post-development condition (Figure 2B in Appendix I.1). Based on the Drainage Study, the existing 100-year flow in Sargent Creek at that location is 265 cfs. The velocity under existing (i.e., no crossing) conditions is 6.0 feet per second. Post-development, the culvert would increase the velocity in the channel to 8.2 cfs during the 100-year event.

The slopes and the inside edge of the culvert would be armored with rip-rap with the minimum length of the rip-rap apron being 25 feet or twice the depth of flow, whichever is greater, based on the engineering design recommended in the Drainage Study, to mitigate potential scouring from the increased post-development creek velocities at the culvert crossing during the 100-year event. The outfall velocity of 8.2 feet per second would be reduced to the pre-development flow velocity of 6 feet per second downstream of the culvert a short distance, such as by the downstream end of the rip-rap apron or shortly thereafter. Post-development increased velocities associated with the 100-year storm event would affect only a small percentage of the total stream channel due to the length of the culvert being only 66 feet of the stream channel's total length of 12,000 feet before it leaves the site and enters the Pajaro River. The proposed rip-rap apron would dissipate energy and prevent scour from causing significant erosion for 100-year flow events at the proposed crossing. The culvert would not alter post-development scour during storm events of lesser intensity than the 100-year event. After reclamation of the Phase 3 and Phase 4 areas has been completed, the Sargent Creek crossing would be removed, and the area disturbed for the maintenance road would be revegetated (or maintained for use for cattle operations). After the removal of the Sargent Creek crossings, Sargent Creek would be restored to its natural pre-Project condition.

For the above reasons, the operational impacts would be **less than significant**.

Reclamation

Water quality impacts, including those associated with erosion and sedimentation of on- and off-site receiving waters due to stormwater runoff, would be **less than significant** for the proposed reclamation activities for the following reasons. As described under Impact 3.10-1 and Impact 3.10-2, above, implementing actions and BMPs required under the Construction General Permit and associated construction SWPPP, NPDES Industrial Permit and associated industrial operations SWPPP (Appendix I.4), the Reclamation Plan (Appendix B), as well as proposed measures outlined in Chapter 2, *Project Description*, relating to stormwater drainage (Section 2.4.3 and Section 2.6.5) and erosion control (Section 2.4.4), would prevent significant water quality impacts related to erosion and the transport of sediments in stormwater associated with reclamation activities.

Summary

The model analysis presented in the Drainage Study under the pre- and post-Project condition for each of the assessed channel realignments, floodplain realignment, and creek crossings show that the Project would not increase peak discharge rates and flood flow elevations associated with the 100-year storm in a manner that would result in substantial scour, erosion, or sediment transport on-site or downstream. The proposed drainage improvements would largely mimic the pre-Project hydrology of the site regarding peak flow rates and would slightly decrease overall the peak sediment transport associated with Tar Creek 100-year flows. As such, implementation of the Project would not result in substantial erosion or sediment transport or other hydromodification-related impacts on- or off-site, and the Project would not result in increased sediment being transported to downgradient receiving waters in a manner that would degrade receiving water quality or contribute to impairments for sediment and turbidity that have been determined for Carnadero Creek and the lower Pajaro River.

The Project design is consistent with applicable regulatory standards for and would not result in hydromodification-related impacts on-site or downstream. The proposed design elements for stormwater capture, conveyance, and routing are sized appropriately for calculated peak discharges associated with the required design storms. Additionally, the stormwater system has been designed, based on engineering and model analysis, to ensure channel and culvert stability for the 100-year/24-hour design storm. Impacts related to substantially altering the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site, increased runoff, or adverse impacts on water quality or related to flood flows would be **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant

Impact 3.10-8: The Project would not risk release of pollutants due to Project inundation in a flood hazard zone, or due to impeding or redirecting flood flows. (Less than Significant)

This impact discussion corresponds to Significance Criteria c(4) and (d) (see Section 3.10.4.2).

The Project site is not located near an ocean, bay, or other large body of water and would not be subject to inundation due to dam failure, tsunami, or seiche. As described in Section 3.10.3.2, *Surface Water Resources*, the Project site is not located within a designated 100-year flood hazard area. The Project site is located within FEMA Flood Zone D: areas in which flood hazards are undetermined, but possible. As described in Section 3.10.3.2, the 100-year flood limits of Tar Creek were calculated for the Project site (Appendix I.1). Based on the 100-year calculated flood limits of Tar Creek, the proposed processing plant is within an area at risk of inundation during a 100-year flood event. No other portions of the Project site are within an area at risk of inundation during a 100-year flood event and, as such, would not result in the release of pollutants due to flooding.

Construction and Reclamation

Because construction and reclamation of the proposed processing plant site would be short-term in nature and conducted primarily in the seasonally dry months when rainfall is not typical, flood-related impacts are assessed for the operation phase of the processing plant site and associated access road.

Operation

Mining Pits, Access Roads, Conveyor Belt, Rail Spur

The proposed stormwater drainage, retention, and conveyance system is designed to accommodate 100-year, 24-hour precipitation conditions with sizing and capacity to safely convey storm flows associated with 100-year storm, including stormwater retention and sedimentation basins within the Phase 1 to 4 mining areas sized appropriately to contain stormwater generated within the active mining areas without discharge. Therefore, a 100-year storm event would not result in flooding and the subsequent release of pollutants due to inundation.

Processing Plant and Tar Creek Bridge

The 100-year flood zone derived for the Project is consistent with the 2007 Santa Clara Drainage Manual (County of Santa Clara 2007) hydrologic method for determining flows from a drainage area greater than 200 acres in area. The calculated 100-year flood limits of Tar Creek extend approximately 350 feet south into the plant site with surface elevations from 164.7 to 158.9 feet, representing flows approximately 2 to 3 feet deep at the northern edge of the plant site (Appendix I.1). Inundation of the processing plant during a 100-year storm event could result in the release of sediment and other industrial pollutants into downgradient receiving waters (i.e., Carnadero Creek and the lower Pajaro River), which are impaired due to various pollutants, including sediment (see Section 3.10.3.2, *Surface Water Resources*).

To prevent the flood limits from encroaching into the plant site, a 5-foot-high berm is proposed along the northern boundary of the plant with another 4-foot-high berm proposed on the north side of Tar Creek (Figure 2-14) and also improvements to bring the plant access road above the determined flood plain elevation. The proposed berms would channel flood flows associated with 100-year water surface elevations in Tar Creek under a 5-foot-wide, 70-foot-long proposed bridge. The design of the bridge is consistent with the requirements of the Santa Clara Drainage Manual, and would convey flood flows from a 100-year storm event with 0.7 feet of freeboard (Appendix I.1).

Engineering analysis conducted as part of Project design determined that, with the proposed berms, the water surface elevation would rise by about 0.8 to 1.0 feet for 300 feet upstream of the bridge during a 100-year storm event; in the vicinity of the plant site, the water surface elevation would rise by approximately 0.2 to 1.1 feet. The depth of flow along the berm protecting the plant site would be 3 feet leaving approximately 2 feet to the top of the berm. The berms would be armored with 12-inch rip rap to prevent scour. In addition, bridge abutments would be reinforced with 12-inch rock placed at a thickness of 1.2 feet and extending 7.6 feet horizontally, 6 feet vertically, and 25 feet downstream of abutments to prevent erosion and scour of the Tar Creek channel and bed. Therefore, the proposed berms would ensure that the processing plant would not be inundated during a 100-year storm event due to the realigned floodplain, and as such, pollutants would not be released as a result of site inundation due to flooding. Further, the design of the berms and Tar Creek Bridge ensure such features are stable under 100-year flood flows and would not be damaged, undermined, or fail in a manner that would result in inundation.

The 100-year water surface elevation would be 0.6 feet higher than the existing elevation at the plant and the proposed and existing water surface elevation would be identical 700 feet upstream of the plant site. There are no developed structures upstream of the plant within the reach of increased surface water elevations during the 100-year storm event; as such, increased surface water elevations during a 100-year storm event would not result in the release of pollutants due to inundation. The baseline and post-Project water surface elevations would be identical at the downstream limit of the plant, which is upstream of the location where Tar Creek reaches the existing culvert under the railroad track and U.S. 101 (Appendix I.1). Thus, the Project would not alter the flood risk potential downstream of Tar Creek Bridge or the potential for release of pollutants due to inundation by flood waters.

Access Road Improvements

There are two concrete box culverts approximately 700 feet apart that currently convey stormwater runoff from the west under Old Monterey Road. The existing concrete box culverts would remain in place as part of the proposed access road improvements. The southern culvert is 11 feet wide by 4 feet deep and conveys flows from Tick Creek. During a storm of 20-year intensity, Tick Creek carries a peak flow of 397 cfs. The culvert to the north is 5 feet wide by 4 feet deep and conveys flows from an unnamed drainage. During a storm of 20-year intensity, the unnamed channel north of Tick Creek carries a peak flow of 132 cfs.

The existing culverts that convey flows from Tick Creek under Old Monterey Road were assessed to quantify storm water flow rates tributary to Old Monterey Road and determine the capacity of the existing water conveyance facilities (THA 2018). The drainage analysis is consistent with the methodologies and requirements of the County's drainage manual (County of Santa Clara 2007). Based on calculations presented in the Drainage Study, both culverts have capacity to convey storm flows associated with the storm of 20-year intensity, consistent with the drainage manual. During a 100-year event, storm flows would exceed the capacity of both culverts and overtop Old Monterey Road and continue to flow east, as occurs under existing conditions. The quarry would not operate during the 100-year storm event, or during events greater than 0.5 inches of rainfall, and Old Monterey Road would not be used to access the site during a flood event for safety reasons. Additionally, the rehabilitated roadway would be installed at a higher elevation than the existing road and would be constructed to current code, increasing stability and reducing the potential for erosion or washout, and reducing the potential for an associated release of pollutants due to inundation by 100-year flood flows.

Summary

The design of the proposed flood protection berms, access road improvements, and access road bridge over Tar Creek would prevent inundation of Project facilities from flooding events with a 100-year return period and would avoid inundation or washout of Project facilities, ensuring no release of pollutants on-site or off-site as a result of a 100-year flood event. The proposed stormwater drainage, retention, and conveyance system within the proposed processing plant is designed to accommodate 100-year, 24-hour precipitation conditions with sizing and capacity to safely convey storm flows associated with 100-year storm. As assessed under Impact 3.10-2, Project implementation would not substantially alter drainage patterns in a manner that would result in significant impacts related to erosion or increasing the rate or amount of surface runoff. Run-on from adjacent drainage areas would be conveyed around the active mining areas and stormwater discharge volumes and rates would not substantially increase as a result of the Project. In addition, as discussed under Impact 3.10-2, on-site hazardous materials would be placed inside secondary containment structures, a Hazardous Material Business Plan and Spill Prevention Control Counter Measure Plan are included in the Project (see Section 3.9, *Hazards and Hazardous Materials*), and implementation of the Industrial SWPPP would require inclusion of numerous BMPs related to the storage, processing and handling of hazardous materials and other potential pollutants, minimizing the risk that pollutants would become mobilized as a result of inundation of the processing plant area. Impacts related to impeding or redirecting flood flows or the release of pollutants from inundation by flood waters or exceeding proposed or existing stormwater conveyance systems would be **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant

Impact 3.10-9: The Project would not conflict with the CCRWQCB Basin Plan or obstruct implementation of a sustainable groundwater management plan. (Less than Significant)

This impact discussion corresponds to Significance Criterion (e) (see Section 3.10.4.2).

All Project Components (Construction, Operation, and Reclamation)

The geographic scope for assessing Project consistency with regionally oriented water quality– and hydrology-related management plans for surface and groundwater resources includes the entire Project site and changes resulting from implementation of the Project within the Tar Creek and Sargent Creek watershed areas, which discharge to Carnadero Creek and the lower Pajaro River. For this reason, the following analysis considers the Project in its entirety.

Surface Water

The Basin Plan beneficial uses and water quality objectives are designed to preserve and enhance water quality and protect the beneficial uses of all regional terrestrial surface water bodies (e.g., creeks, rivers, streams, and lakes) and groundwaters within the CCRWQCB's jurisdictional area. As discussed above under Impacts 3.10-1, 3.10-2, and 3.10-3, no water quality degradation would occur as a result of the construction, operation, or reclamation of the Project (all components) as compared to baseline conditions. As described under Impact 3.10-1 and Impact 3.10-2, the Project would have a less-than-significant impact on surface water and groundwater quality on-site and off-site. This includes Carnadero Creek and the lower Pajaro River, which are subject to the Basin Plan water quality objectives. Carnadero Creek and the lower Pajaro River currently are classified as impaired for sediment/turbidity, as well as other pollutants not associated with the Project (e.g., legacy pesticides related to agriculture). As discussed under Impact 3.10-1 and Impact 3.10-2, under the Project, stormwater would be retained on-site in retention ponds or conveyed around active industrial areas (i.e., the processing plant site and active mining areas) in a manner consistent with NPDES discharge requirements as well as receiving water Basin Plan water quality objectives, ensuring that receiving waters are not degraded and that beneficial uses defined in the Basin Plan are not impaired.

The Project would comply with the requirements of the Construction General Permit and the Industrial NPDES Permit, including implementation of BMPs and other requirements of associated NPDES Permit required SWPPPs, as well as the requirements of the associated MRP, all of which are designed to ensure stormwater discharges associated with construction, operation maintenance, and reclamation activities at the Project site comply with applicable water quality standards in the Basin Plan. Impacts relating to conflicting with or obstructing implementing of a water quality control plan would be **less than significant**.

Groundwater

As described in Section 3.10.3.2, *Surface Water Resources*, the Project site is located partially within the Llagas groundwater subbasin (processing plant area). Valley Water is the designated GSA for portions of the Santa Clara and Llagas groundwater subbasins within Santa Clara County, and as such has prepared a GWMP for the Santa Clara and Llagas (Valley Water 2021a). This document is an alternative to a GSP required by SGMA and describes Valley Water's groundwater sustainability goals, and the strategies, programs, and activities that support those goals. As discussed in Section 3.10.2.2, the Project site is close to the basin boundary of the Llagas and San Benito subbasins and thus groundwater management actions in the San Benito Subbasin may affect groundwater use by the Project. PV Water is the designated GSA for the local groundwater basin and must adopt a GSP. PV Water submitted the Basin Management Plan as an alternative to a GSP in December 2016, which the DWR approved as an alternative plan functionally equivalent to a GSP.

The Project would not conflict with or obstruct implementation of Valley Water's GWMP or the San Benito GSP, as the groundwater users in the Llagas and San Benito's subbasins are located upgradient of the Project site and the volume of groundwater that is proposed for extraction would not create excessive drawdown to damage nearby production wells. Approval of the Project groundwater well would require confirmation from Valley Water, as the Groundwater Sustainability Agency, that the well would not be inconsistent with the groundwater management plan, per Executive Order N-7-22. The quantities of groundwater consumed by the Project would not adversely affect groundwater users in the Pajaro Valley area located downstream of the Project site (see Impact 3.10-4 for details). Implementation of the Project would not result in impacts related to ongoing substantial groundwater withdrawals or reduce groundwater recharge, as discussed under Impact 3.10-6, and therefore would not conflict with or obstruct implementation of a sustainable groundwater management plan. Impacts relating to conflict or obstruction of implementing a sustainable groundwater management plan would be **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant

3.10.4.4 Cumulative Analysis

Impact 3.10-10: The Project would contribute to significant cumulative degradation of water quality. (Less than Significant with Mitigation)

The Project would occur in areas that drain to Tar Creek and Sargent Creek directly, which in turn discharge into Carnadero Creek and the lower Pajaro River. Therefore, the geographic scope for assessing potential cumulative hydrology and water quality impacts consists of the Project site and the geographic locations of the infrastructure, capital improvement, and private development projects identified in Table 3.1-1 and described in Section 3.1.6 that are reasonably likely to be constructed and/or operated in a similar timeframe as the Project and could contribute incremental water quality and hydrologic impacts to common receiving waters and drainage areas within the watershed. Cumulative impacts are assessed for the life of the Project (i.e., during construction, operation, and reclamation phases). The analysis of cumulative impacts on hydrology and water quality considers those cumulative projects listed in Table 3.1-1. The analysis focuses on cumulative adverse effects on water resources associated with construction and operation of the following projects listed in Table 3.1-1 due to their size and location in relation to receiving waters:

- U.S. 101 Widening Project;
- Shamrock Seeds Project;
- Gilroy Rodeo Grounds;

- Z-Best Compost Facility Modification; and
- Christopher Ranch Farm Worker Housing, County of Santa Clara.

Construction

As discussed in Section 3.10.2.2, each project involving disturbance of 1 acre or more of land would be required to comply with the NPDES Construction General Permit. NPDES general permits are designed to establish the regulatory requirements for a broad range of construction activities under differing site conditions with similar discharge characteristics (SWRCB 2013). A standard set of permit requirements prescribed via the Construction General Permit provides effective protection of water resources and ensures compliance with water quality standards for discharges of storm water from construction sites with common receiving waters.

Compliance with the Construction General Permit would require each project involving disturbance of 1 acre or more of land to prepare and implement a SWPPP. The SWPPPs would describe BMPs to control runoff and prevent erosion, sediment transport, and other pollutants from being mobilized or otherwise transported via stormwater runoff to receiving waters for each such project. The Construction General Permit includes several requirements in addition to the SWPPP, including risk-level assessment for construction sites, an active stormwater monitoring and reporting program during construction (for Risk Level II and III sites), rain event action plans for certain higher risk sites, and numeric effluent limitations for pH and turbidity as well as requirements for qualified professionals that prepare and implement the plan. Site risk is determined using a combination of the proposed project's sediment risk and the risk to receiving water quality. Receiving water risk is based on whether the project drains to a sediment-sensitive water body[18], such as the Pajaro River. The risk assessment and SWPPP must be prepared by a State-qualified SWPPP Developer and implementation of the SWPPP must be overseen by a State-qualified SWPPP Practitioner.

In this way, the Construction General Permit addresses cumulative discharges and/or pollutants arising from construction sites throughout the state. For example, two adjacent construction sites would be required to implement BMPs to reduce and control the release of sediment and/or other pollutants in any runoff leaving their respective sites. The runoff water from both sites would be required to achieve the same action levels, measured as a maximum amount of sediment or pollutant allowed per unit volume of runoff water. Thus, even if the runoff waters were to combine after leaving the sites, the sediments and/or pollutants in the combined runoff would still be at concentrations (amount of sediment or pollutants per volume of runoff water) below action levels and would not combine to be cumulatively significant.

Project construction activities would also be consistent with the Construction General Permit; compliance with which would be required by law. However, as discussed in Impact 3.10-1, the Construction General Permit and associated SWPPP requirements do not specifically anticipate direct impacts to water quality that may result from work within stream channels, such as

[18] A sediment-sensitive water body is one that appears on the most recent 303(d) list for water bodies as impaired for sediment; has a USEPA-approved TMDL implementation plan for sediment; or has the beneficial uses of cold freshwater habitat, fish migration, and fish spawning.

proposed for the Tar Creek Bridge and Sargent Creek road crossing. Therefore, construction of the Tar Creek Bridge and Sargent Creek road crossing could contribute considerably to water quality degradation, which would be a significant direct impact, and contribute to a significant cumulative water quality impact, to which the Project's contribution would be cumulatively considerable and therefore **significant**.

Operation and Reclamation

As discussed in Section 3.10.2.2, cumulative projects would be required to comply with Phase II NPDES Permit stormwater requirements, including post-construction requirements, for the Central Coast. Such stormwater requirements are part of a regional program designed to address the potential cumulative effects of projects within the region. Adherence to these requirements ensure hydrology and water quality effects related to the alteration of drainage patterns would not cause a significant cumulative impact.

As discussed in Impacts 3.10-2 and 3.10-7, the Project would require site disturbance in a manner that could alter drainage patterns. Most of the projects identified in Table 3.1-1 also would involve new impervious surfaces or land use changes, which may alter site drainage. Alterations to site drainage could cause increased peak flows in creeks and cause hydromodification-related impacts, exacerbate erosion and sedimentation, and result in greater non-point source pollution in downstream water bodies within the Pajaro River watershed area. Increased areas of impervious surfaces could also increase the risk of flooding and the subsequent release of pollutants and also cause runoff volumes to exceed stormwater conveyance system capacities.

The Project includes a stormwater management system made up of a series of drains, swales, conveyance pipes, sediment ponds to treat stormwater (i.e., capture sediment), and retention ponds to hold captured stormwater for percolation and groundwater recharge, as well as use of proposed outfall structures for stormwater discharges that are designed to convey stormwater runoff associated with the 100-year storm event and that are designed sufficiently to dissipate energy of discharges, avoid scour of the channel bed and bank, and avoid or minimize erosion and sedimentation in receiving watercourses. Because the Project would not substantially increase the rate or amount of peak runoff discharged to Sargent Creek, Tar Creek, Carnadero Creek, or the Pajaro River the Project would not contribute considerably to hydromodification impacts, increased flooding or flood risks, erosion, and/or sedimentation on- or off-site, reductions in groundwater recharge.

As discussed in Section 3.10.3.2, *Surface Water Resources*, Carnadero Creek and the lower Pajaro River are listed as impaired water bodies for sediment and turbidity. Prior to issuance of Industrial General Permits, the CCRWQCB would conduct a review and authorization process to ensure such permits, if granted, would be protective of designated beneficial uses and water quality and that water quality issues, such as impairments for sediment and/or other pollutants are addressed in NPDES discharge Water Quality Protection Standards or discharge requirements and that TMDL requirements are incorporated as permit conditions in a manner consistent with relevant plans, policies, and guidelines. The regulatory review process associated with the Industrial General Permit, similar to that described for the Construction General Permit, has been developed to address cumulative water quality or hydrologic conditions arising from operational discharges within a watershed, and is intended to maintain cumulative effects of projects subject to this requirement below levels that would be considered significant for associated receiving waters. Based on the above analysis, cumulative water quality impacts during operation and reclamation would not be significant, and the Project's incremental contribution to this impact would not be cumulatively considerable, and thus **less than significant**.

> **Mitigation Measure 3.10-10:** Implement Mitigation Measure 3.4-4 from Section 3.4, *Biological Resources*, during Project construction.
>
> **Significance after Mitigation:** Less than significant
>
> Implementation of the Project's proposed stormwater drainage plan (Section 2.4.3), erosion and sediment controls (Section 2.4.4), and Hazardous Materials Business Plan (Section 3.9, *Hazardous Materials*), in combination with Mitigation Measure 3-4.4, would ensure that the Project contribution to cumulative water quality degradation would not be considerable, and therefore less than significant. by requiring actions to protect water quality during construction.

Impact 3.10-11: The Project would not contribute to significant cumulative increases in the consumption of groundwater supply. (Less than Significant)

The geographic scope for assessing cumulative groundwater impacts is the region overlying the groundwater basins surrounding the Project site and the urban areas of Hollister and Gilroy. The groundwater subbasins are the Llagas Subbasin and Bolsa Subbasin underlying the southern Santa Clara County, the San Juan Bautista in San Benito County, and the Pajaro Valley Water Management Agency service area in the Pajaro River Valley. The temporal scope is 30 years (the life of the Project). Evaluation of the cumulative impacts to downstream uses pertains to potential changes in surface water and groundwater supply. The issue addresses whether Project pumping in conjunction with other foreseeable changes in consumptive use of groundwater in the San Benito River and Pajaro River watersheds would reduce downstream Pajaro River flow to the point that it would no longer supply adequate recharge to meet beneficial uses, including uses for groundwater supply and for environmental benefits, i.e., steelhead habitat (Appendix I.5).

Groundwater users in the Llagas Subbasin in Santa Clara County and the North San Benito basin in San Benito County would be unaffected from a water balance standpoint because they are upgradient of the Project well and impacted river reach. Water users most likely to be affected would be downstream in the Pajaro Valley near Watsonville. Groundwater pumping in that area averaged 52,000 AFY during 2009–2013 (Appendix I.5) and amounted to approximately 42,268 acre-feet in water year 2019 (PVWMA 2020 in Appendix I.5).

The Llagas Subbasin in Santa Clara County is sustainably managed due to the comprehensive activities described in Valley Water's 2016 Groundwater Management Plan. Groundwater elevation and storage remained in healthy condition through Water Year (WY) 2020. WY 2020 was a dry year, but adequate surface water supplies were available to support managed recharge using local and imported surface water for groundwater replenishment. Treated water delivered by Valley Water provided in-lieu recharge, and countywide water conservation programs reduced water demands. This comprehensive recharge continues to support a balanced long-term groundwater budget. During WY 2020, outflows exceeded inflows in the Llagas Subbasin, resulting in a net decrease in storage of 2,300 acre-feet. However, groundwater storage in WY 2020 remained well within the “Normal” stage under Valley Water’s Water Shortage Contingency Plan (Valley Water 2021b).

The only reasonably foreseeable development project in the Pajaro River/San Benito River watershed is construction of the Pacheco Reservoir Expansion Project. Less specific projections of future groundwater use are included in Urban Water Management Plans for Gilroy and Hollister and in the Northern San Benito County draft groundwater sustainability plan. Each of these components of future groundwater use was considered.

Pacheco Reservoir Expansion Project (PREP)

The proposed Pacheco Reservoir Expansion Project (PREP) would consist of a 140,000-acre-foot reservoir on Pacheco Creek upstream of the Gilroy-Hollister groundwater basin, about 15 miles northeast of Hollister (Valley Water, 2022). Pacheco Creek flows to San Felipe Lake, located about 8 miles northeast of the Project site. The reservoir would primarily store imported surface water from the Central Valley Project, but it would also capture runoff from the Pacheco Creek watershed upstream of the dam site. Preliminary proposals include generally higher flows and recharge during the dry season than presently occur. The releases would not flow all the way to Pajaro Valley, but by increasing average annual recharge to the Gilroy-Hollister Basin they would tend to increase groundwater discharge from that basin to the Pajaro River, which would tend to increase recharge opportunity in Pajaro Valley. The effect would probably be small and beneficial.

Future Growth in Gilroy and Hollister Areas

The City of Gilroy’s 2020 Urban Water Management Plan (Gilroy) projects an increase in municipal water demand of approximately 3,370 AFY by 2045. The City water supply consists of wells in the Llagas Subbasin of the Gilroy-Hollister Basin. The change in consumptive use of groundwater would be much smaller. About 63 percent of municipal use becomes wastewater that is either recycled for irrigation or percolated back into the groundwater basin (Akel Engineering Group 2016 in Appendix I.5). Furthermore, if urban growth replaces irrigated agricultural land, the urban use offsets the existing agricultural use. Because of the high percentage of return flow, per-acre consumptive use following urbanization can be lower than per-acre consumptive use for agriculture.

Growth projections for northern San Benito County were obtained from the draft groundwater sustainability plan, prepared by the San Benito County Water District (SBCWD) (2021). A future growth scenario was developed that estimated an increase of 9,000 AFY of municipal groundwater use in the Hollister area by 2068. Assuming a linear increase, that would correspond to roughly 4,500 AFY by 2040. As with the City of Gilroy, much of the water use is not consumptive. It becomes wastewater that is either percolated back to the groundwater basin or recycled for irrigation. Municipal use of imported Central Valley Project (CVP) water is also projected to increase—by about 700 AFY—and wastewater generated by that use would further offset the increase in municipal groundwater pumping. Furthermore, if urban growth displaces currently irrigated agricultural land, the change in consumptive use of groundwater would likely be small. Simulations of this growth scenario assuming nearly all urban expansion would be onto non-irrigated lands indicated that the increase in pumping would be partially offset by increased percolation from streams and rivers. This would tend to decrease downstream flow in the Pajaro River, but the impact of that decrease on groundwater recharge in the Pajaro Valley area depends on whether the river is flowing to the ocean at that time.

Overall agricultural water use in the Llagas and northern San Benito County areas is not projected to change appreciably. Urbanization might displace some irrigated agriculture, as discussed above. Vineyards have been expanding in the Paicines and Tres Pinos Creek Valley areas of the San Benito River watershed, but the expansion is not expected to be large due to market conditions, and groundwater modeling shows that increased groundwater pumping for irrigation in those areas tends to be offset by increased river and creek percolation in winter, when downstream flows in the Pajaro River already exceed the recharge capacity of the Pajaro Valley area downstream (SBCWD 2020).

In summary, PREP and urban growth could increase consumptive use of groundwater upstream of the Pajaro Valley by anywhere from zero to several thousand acre-feet per year, depending largely on whether urban growth displaces currently irrigated cropland. The impact on groundwater recharge in the Pajaro Valley area would be smaller than the increase in consumptive use because some of the decrease in Pajaro River flow would be at times when percolation in the Pajaro Valley area is at its maximum capacity and the river is flowing to the ocean. In the context of this wide range of uncertainty and in the context of the Pajaro Valley groundwater budget, cumulative groundwater supply impacts would not be significant, and the 83 AFY of consumptive use during the mining phase of the Project would be small and therefore not cumulatively considerable. Therefore, the incremental Project impact is considered **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant

3.10.5 References

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3.11 Mineral Resources

3.11.1 Introduction

This section discusses the occurrence and availability of mineral resources at the Project site and evaluates whether the Project would result in a significant impact associated with mineral reserves. The analysis is based in part on publicly available reports and maps published by the California Geological Survey, County of Santa Clara (County).

3.11.2 Regulatory Setting

3.11.2.1 Federal

No federal laws or regulations are applicable to the Project that would reduce an environmental effect on the availability of mineral resources.

3.11.2.2 State

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) was signed into law in 1975 with the intent to: 1) assure reclamation of mined lands, 2) encourage production and conservation of minerals, and 3) create and maintain surface mining and reclamation policy (regulations). SMARA mandated that the State Geologist initiate mineral land classifications to help identify and protect mineral resources in areas within the state subject to urban expansion or other irreversible land uses, which could preclude mineral extraction. SMARA also allows the California State Mining and Geology Board (SMGB), after receiving classification information from the State Geologist, to designate lands containing mineral deposits of regional or statewide significance. Construction aggregate was selected by the SMGB to be the initial commodity targeted for classification because of its importance to society, its unique economic characteristics, and the imminent threat that continuing urbanization poses to that resource. The State Geologist delineates Mineral Resource Zones (MRZ) depending on the information known about a potential resource and whether that resource is available (discussed in further detail below). The Project site is not within an identified MRZ but an application for its designation as a deposit, containing Portland cement concrete (PCC)-grade aggregate, has been submitted to the California Geological Survey (Freeman Associates 2022).

3.11.2.3 Local

Surface Mining and Reclamation Ordinance

The County's Surface Mining and Reclamation Ordinance (County Code, Section 4.10.370) was adopted to comply with and implement the provisions of SMARA by adopting procedures for reviewing, approving, and/or permitting surface mining operations, reclamation plans, and financial assurances in the unincorporated areas of the county. The purpose of Section 4.10.370 is to ensure the continued availability of important mineral resources, while regulating surface mining operations as required by SMARA (County of Santa Clara 2020). The ordinance sets forth the general procedural, operational, and reclamation requirements that must be complied with, where applicable, by surface mining and processing operations in the county. The Ordinance contains requirements for the content of a reclamation plan, the review procedure, and mining standards.

Santa Clara County General Plan

One of the primary goals contained within the County's General Plan is to manage and protect natural environmental resources, including mineral resource commodities. The General Plan discourages urban encroachment and urban development within areas designated as containing high-priority mineral resources, and directs existing or planned mineral resources extraction operations to conduct activities in an environmentally responsible manner, including the reclamation and rehabilitation of depleted mineral extraction sites. Specific policies contained in the Resource Conservation Element of the General Plan are listed below (County of Santa Clara 1994):

> ***Policy R-RC 67*:** Local supplies of mineral resources should be recognized for their importance to the local, regional, and state economy. Countywide strategies for preserving and managing mineral resources include:
>
> a) Ensuring continued availability of mineral resources to meet long term demand
>
> b) Mitigating environmental impacts of extraction and transportation
>
> c) Reclaiming sites for appropriate subsequent land uses
>
> ***Policy R-RC 68*:** Current and future demand for mineral resources in the County, particularly construction aggregates, should be ensured by the following means:
>
> a) Inventorying existing sites, identifying and properly designating potential new sites for protection measures
>
> b) Preserving deposits and access routes
>
> c) Increased use of recycled material
>
> d) Proper development of new quarry sites
>
> ***Policy R-RC 69*:** Existing sites and access routes for regionally significant resources should be protected from incompatible land uses and development that would preclude or unnecessarily limit resource availability.
>
> ***Policy R-RC 70*:** When making land use decisions involving mineral resource areas of state or regional significance, decisions about alternative land uses should be carefully balanced against the importance of the mineral deposits to their market region as a whole.

3.11.3 Environmental Setting

3.11.3.1 Aggregate Resources

Regional Demand

Sand, gravel, and crushed stone are construction materials collectively referred to as aggregate. These materials provide the bulk and strength to Portland Pozzolana Cement (PCC), roadway asphalt, plaster, and stucco. Aggregate is also used as road base, subbase, railroad ballast, and fill.

California consumes large quantities of aggregate and future demand is expected to increase throughout California in the coming years (CGS 2018). Aggregate materials are needed to maintain existing infrastructure and for new construction, so these materials can be an important resource to the regional economy. Further, aggregate is generally low in cost but high in bulk weight so it is essential that these materials can be obtained from nearby sources to reduce costs and environmental impacts associated with transportation (CGS 2018).

The two regions of regional significance for aggregate resources pertinent to the Project site are the Monterey Bay Production-Consumption (P-C) Region and the South San Francisco P-C Region (CGS 1987a, 1987b). The Project site is within the Monterey Bay P-C region. In 2018, the 50-year demand for aggregate resources in the Monterey Bay P-C Region was 333 million tons, and the region had 297 million tons of permitted reserves (89 percent of 50-year demand). The California Geological Survey projects that these reserves could last for the next 41 to 50 years. In the South San Francisco P-C Region, which is north adjacent to the Monterey P-C Region, the 50-year demand is 1,320 million tons with 506 million tons of permitted reserves (38 percent of 50-year demand). These reserves are expected to last for next 21 to 30 years (CGS 2018).

Project Site Aggregate Resources

The potential aggregate resource at the Project site is sand and gravel, which is suitable material for producing PCC.[1] This resource is derived from the geologic deposits underlying the Project site and surrounding areas. The geologic deposits, as described in detail in Section 3.7, *Geology and Soils,* consist of Pliocene-aged [(11 to 3 million years ago (mya)] sandstone and conglomerate[2] of both marine and non-marine origin. These sand and gravel deposits, considered part of the Etchegoin Formation, underlie the surface alluvial materials and topsoil and are interbedded[3] with sandy and silty clays to a depth of about 270 feet (SGS 2016).

Aggregate Resource Zoning and Local Availability

The California Geological Survey has designated mineral resources in the San Francisco-Monterey Bay P-C regions into MRZs based on guidelines adopted by the SMGB. Classification assists the SMGB in designating lands that contain valuable mineral resources, as mandated by SMARA. The objective of the classification and designation process is to ensure that mineral deposits of statewide or regional significance are considered for availability when needed (CGS 1999). MRZ classifications are defined as:

> **MRZ-1:** Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
>
> **MRZ-2:** Areas where adequate information indicates that significant deposits are present, or where it is judged that a high likelihood for their presence exists.

1 Portland cement is the basic ingredient of concrete. PCC is formed when Portland cement creates a paste with water that binds with the aggregate (i.e., sand, gravel, and crushed rock) to harden. Cement is manufactured through a tightly controlled chemical combination of calcium, silicon, aluminum, iron, and other ingredients.

2 A conglomerate is a sedimentary rock made up of many smaller rocks within a cemented matrix.

3 Interbedded refers to sedimentary beds lying between or alternating with others of different character (Jackson 1997).

MRZ-3: Areas that contain mineral deposits, but their significance cannot be evaluated from available data.

MRZ-4: Areas where available information is inadequate for assignment of MRZ classification.

Mineral resources including hard rock and geologic deposits similar to those underlying Sargent Ranch, have been classified as MRZ-2 near the Project site. The active mining operation closest to Sargent Ranch is the Graniterock-Aromas facility located 4 miles southwest. This facility extracts Cretaceous-age (136 to 65 mya) igneous[4] rocks (referred to Hornblende-Gabbro) for PCC and processes several other marketable products, including sand and gravel. The Hornblende Gabbro MRZ-2 sector extends southeast of the Graniterock facility along the San Andreas Fault Zone, but is not currently owned or controlled by aggregate producers. An elongated sand and gravel MRZ-2 sector begins 2 miles south-southeast of the Project site where U.S. 101 crosses the San Benito River and extends approximately 4 miles upstream (USGS 1955, Revised 1993; CGS 1987). This MRZ-2 sector is not currently owned or controlled by aggregate producers (CGS 1987).

The sand and gravel deposits underlying Sargent Quarry are not yet identified as an MRZ-2 deposit containing suitable PCC-grade aggregate. An application for SMGB designation has been filed and is pending agency review and the update of the resource sector to the Monterey Bay P-C Region within the Chittenden Quadrangle[5] (Freeman Associates 2022).

3.11.4 Impact Evaluation

3.11.4.1 Approach to the Analysis

The impact analysis for mineral resources involved reviewing geologic descriptions and the mining plan to assess the degree to which the aggregate deposits represent a sufficient volume and are accessible. The analysis also assesses the existing zoning and whether mineral extraction is permitted in this area. The Project site is zoned AR-d1 and AR-d1-sr. The AR zone refers to Agricultural Ranchlands, where mineral extraction is a permitted use, with approval of a Use Permit (Zoning Code, Section 2.20.010(B).

3.11.4.2 Significance Criteria

Pursuant to CEQA Guidelines Appendix G, a significant impact would result if the Project would either:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state.

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.

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[4] Igneous Rocks refer to those that were solidified from molten or partly molten material (i.e., magma).

[5] The California Geological Survey divides the Monterey Bay Production Consumption Region by the designated USGS 7.5-Minute Quadrangle Maps. The Project site is within the Chittenden Quadrangle (USGS 1955, revised 1993).

3.11.4.3 Project Impacts

Impact 3.11-1: The Project could result in the loss of a valuable mineral resource or loss of a locally important mineral resource recovery site (Less than Significant).

This impact discussion corresponds to Significance Criteria (a) and (b).

Construction, Operation, and Reclamation

All Project Components

The mineral resources impact discussion applies to the Project site as a whole and its proposed future operation as an aggregate quarry and processing facility; the individual components of the Project (mining pits, processing plant, conveyor belt, rail spur, access road, roadway improvement, and reclamation) are not discussed or analyzed individually, because they all contribute to the extraction of aggregate resources from the Project site.

The Project site is currently open range land zoned by the County as AR-d1 and AR-d1-sr, referring to Agricultural Ranchlands where mineral extraction is a permitted. There is no existing or planned development on the Project site that would hinder future mineral extraction. The limits of the mineral resource have been identified and characterized and the Reclamation Plan has demonstrated that pit mining and eventual reclamation in the four stages would be feasible. The Project would not result in a loss of a valuable or locally important mineral resource; rather, it would enable the extraction of an aggregate resource that would benefit the region and residents of the state.

The Project would contribute to reducing a regional deficit of aggregate material over the next 30 years. The Monterey Bay P-C Region has 89 percent of its demand available in permitted aggregate reserves, which is projected to last at least 41 years, but the South San Francisco Bay Region has only 38 percent of its demand with reserves expected to last 21 to 30 years. The proximity of the site to the South San Francisco Bay P-C Region and access to railroad transportation would allow the Project to provide aggregate to other areas of the state besides those destinations within the Monterey P-C Region.

The Project would develop an accessible, long-term (30-year) source of aggregate material for infrastructure maintenance and new construction throughout the region and the state, and would support General Plan direction, particularly Policy R-RC 68 (proper development of new quarry sites). This would be a beneficial effect of the Project and therefore, in terms of adverse impacts, the impact would be **less than significant**.

> **Mitigation:** None required.
>
> **Significance:** Less than significant

3.11.4.4 Cumulative Analysis

Impact 3.11-2: The Project could contribute to cumulative loss of availability of a known mineral resource or loss of a locally important mineral resource recovery site. (Less than Significant)

The geographic scope for the cumulative analysis of mineral resources is the Monterey Bay and South San Francisco Bay P-C regions. The temporal scope is 30 years, which is the duration of the requested Use Permit. All of the projects listed in Table 3.1-1, *Cumulative Projects List,* are in areas designated MRZ-1 as areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence (CGS 1987a). Therefore, none of these projects would result in the loss of important mineral resources. Therefore, the cumulative loss of mineral resources would be a less-than-significant cumulative impact, and Project's incremental contribution would not be cumulatively considerable, and therefore would be **less than significant**.

The Project would not result in a loss of availability of aggregate resources because it would develop a quarry that would extract, process, and transport aggregate materials, thereby helping to relieve resource demand deficits. The aggregate products supplied by the Project would be additive to those materials already being provided by existing mines and to those that are reasonably foreseeable in the future. The Project would also help replenish regional aggregate resources that are lost as current mines cease operations due to exhausted reserves. Therefore, the Project would have a cumulative beneficial effect to regional aggregate resource availability.

Mitigation: None required.

Significance: Less than significant

3.11.5 References

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3.12 Noise

3.12.1 Introduction

This section discusses the effects of the Project on the existing noise and vibration environment in the vicinity of the Project site. The analysis focuses on impacts on humans and structures; potential effects on wildlife are addressed in Section 3.4, *Biological Resources*. The following discussion is based in part on a Noise and Vibration Assessment and supplemental memo prepared by Illingworth & Rodkin, Inc., in February 2017 and February 2019, which are included as Appendix J to this EIR.[1]

3.12.1.1 Technical Background Information - Noise

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the "loudness" of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

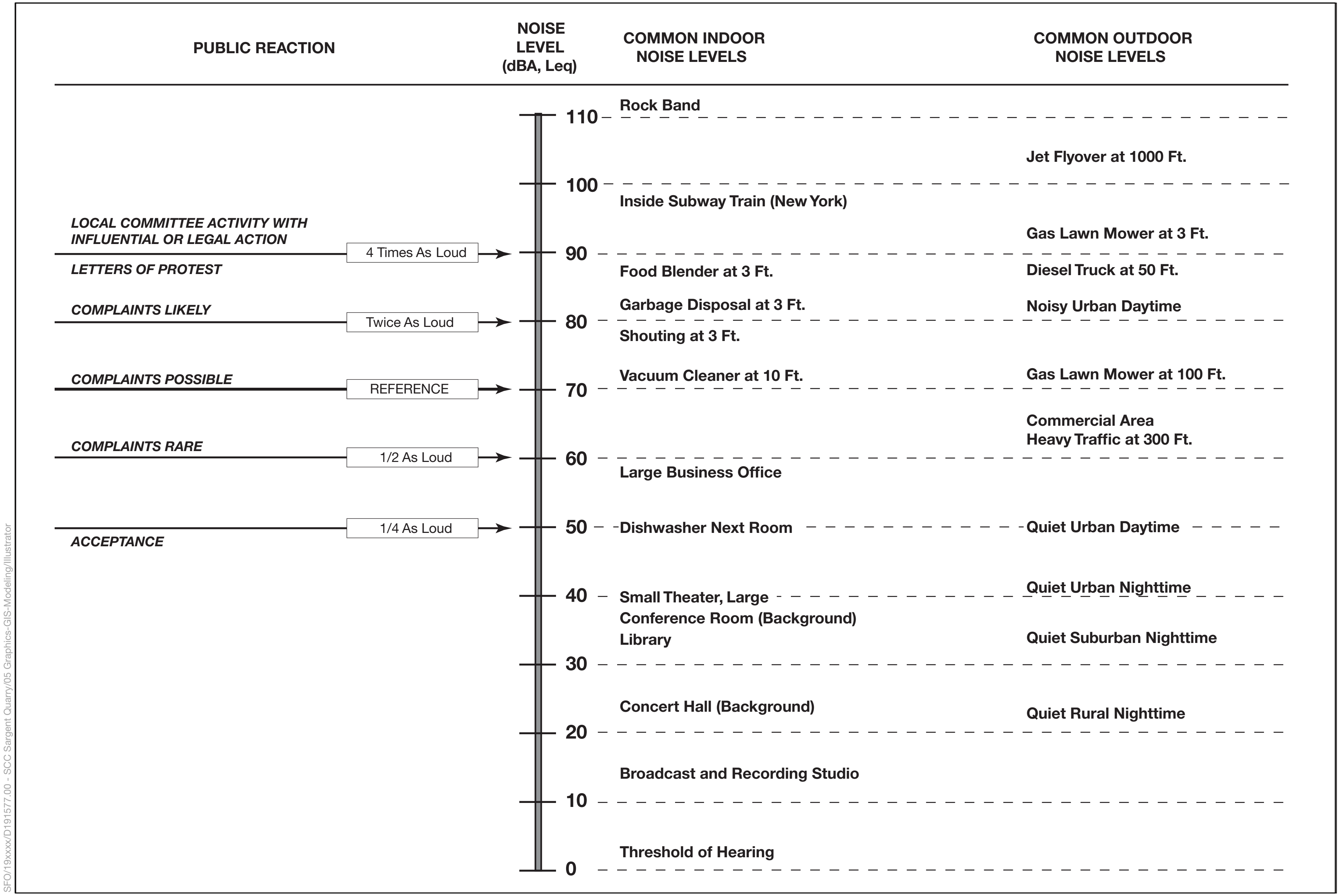
Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude and measured in hertz (Hz). The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. Consequently, when assessing potential noise impacts to humans, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of decibels (dBA).[2]

Noise Exposure and Community Noise

Noise exposure for any individual is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels presented in **Figure 3.12-1** represent noise measured at a given instant in time; however, noise levels rarely persist consistently over a long period of time. Rather, community noise varies over time because of the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise in which the individual contributors cannot be identified. The background noise level changes throughout a typical day, but does so gradually, corresponding to the addition and subtraction of distant noise sources such as traffic and wind. What makes community noise

[1] Note that when the Noise and Vibration Assessment was prepared, the assumed phasing differed from the phasing that is currently proposed. The phasing information from the Assessment has been organized to correctly correspond with the phases described in Chapter 2, Project Description.

[2] All noise levels reported herein reflect A-weighted decibels unless otherwise stated.



SOURCE: Caltrans Transportation Laboratory Noise Manual, 1982; and modification by ESA

SCC Sargent Quarry

Figure 3.12-1
Typical Noise Levels

ESA

constantly variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) that are readily identifiable to the individual.

These successive additions of sound to the community noise environment vary the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to accurately characterize a community noise environment. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below.

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, typically 1 hour, in terms of a single numerical value. The L_{eq} is the constant sound level, which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max}: The instantaneous maximum noise level for a specified period of time.

L_{50}: The noise level that is equaled or exceeded 50 percent of the specified time. This is the median noise level during the specified time.

L_{90}: The noise level that is equaled or exceeded 90 percent of the specified time. The L_{90} is often considered the background noise level averaged over the specified time.

Ldn: The Day/Night Average Sound Level is the 24-hour day and night A-weighed noise exposure level, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night. Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance from nighttime noise. (Also referred to as “DNL.”)

CNEL: The community noise equivalent level. This is the average A-weighted noise level during a 24-hour day that is obtained after 5 dBA are added to noise levels measured between 7 and 10 p.m. and 10 dBA are added to noise levels between 10 p.m. and 7 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The CNEL metric is reported as a number and is generally understood to be in terms of A-weighted decibels.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as hearing loss or sudden startling

The World Health Organization (WHO) defines environmental noise as noise from all sources with the exception of workplace noise. Environmental noise typically produces effects in the first two categories (see Figure 3.12-1). Workers in or near industrial plants would be the most likely to experience noise in the last category.

An important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called “ambient noise” level. With regard to increases in A-weighted noise level, the following relationships are known to exist:

- Under controlled conditions in an acoustics laboratory, the trained healthy human ear is able to discern changes in sound levels of 1 dBA.
- It is widely accepted that the average healthy ear can barely perceive changes in the noise level of 3 dBA.
- A change in level of 5 dBA is a readily perceptible increase in noise level.
- A 10 dBA change is recognized as twice as loud as the original source (Caltrans 2013).

3.12.1.2 Technical Background Information - Vibration

Vibration is an oscillatory motion through a solid medium in which the motion’s amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe physical vibration impacts on buildings. Typical groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include people (especially residents, the elderly, and sick people), structures (especially older masonry structures), and vibration-sensitive equipment.

Another useful vibration descriptor is known as vibration decibels or VdBs. VdBs are generally used when evaluating human response to vibration, as opposed to structural damage (for which PPV is the more commonly used descriptor). Vibration decibels are established relative to a reference quantity, typically 1×10^{-6} inches per second (FTA 2018).

There are no major sources of vibration in the Project site vicinity. Most motor vehicles and trucks have independent suspension systems that substantially reduce if not eliminate vibration generation, barring discontinuities in the roadway.

3.12.2 Regulatory Setting

Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans; local noise ordinances establish standards and procedures for addressing specific noise sources and activities. The Project site and its environs are subject to the noise and vibration policies and standards of the County of Santa Clara General Plan and Ordinance Code.

3.12.2.1 Federal

U.S. Department of Labor, Mine Safety and Health Administration (MSHA)

The mission of the Mine Safety and Health Administration (MSHA) is to administer the provisions of the Federal Mine Safety and Health Act of 1977 (Mine Act) and to enforce compliance with mandatory safety and health standards as a means to eliminate fatal accidents; to reduce the frequency and severity of nonfatal accidents; to minimize health hazards; and to promote improved safety and health conditions in the Nation's mines. MSHA carries out the mandates of the Mine Act at all mining and mineral processing operations in the United States, regardless of size, number of employees, commodity mined, or method of extraction.

MSHA's noise standards (1999) require mine operators to monitor workplace noise exposure and provide for miners and their representatives to observe the monitoring. The standards establish several levels requiring mine operators to take action:

- Miners exposed to an average sound level of 85 decibels (85 dBA) or more over an 8-hour period must be enrolled in a hearing protection program, which will include special training, hearing tests, and hearing protection.
- If workplace noise levels reach 90 dBA or more over an 8-hour period, mine operators must use feasible engineering and administrative controls to reduce noise levels. Hearing protectors are required to be provided and worn if the permissible exposure level cannot be achieved using feasible engineering and administrative controls.
- At workplace noise levels of 105 dBA or more over an 8-hour period, mine operators must ensure the use of both ear plug and earmuff type hearing protectors.
- At no time during the work shift may noise levels exceed 115 dBA.

3.12.2.2 State

California Building Code

State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are collectively known as the California Noise Insulation Standards and are found in Title 24 of the California Code of Regulations. Regulations for single-family homes are not established at the State level.[3]

California Aeronautics Act

California's State Aeronautics Act, as set forth in relevant part in Public Utilities Code (PUC) Section 21670 et seq., charges airport land use commissions (ALUCs) with the responsibility of protecting "… public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and

3 Noise standards for single family homes are usually established in county or city general plan noise elements, and those are mostly for land use compliance for exterior noise levels (ranging from 60 to 65 dBA CNEL) and 45 dBA CNEL for interior noise standard (the same as State regulations for multi-family housing). Because single family homes are just for one family, by definition, there are no concerns with regard to sound transmission between rooms.

safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses" (PUC Section 21670(a)(2)). In order to accomplish this goal, ALUCs are required to prepare airport land use compatibility plans (ALUCPs) that are based on a long-range master plan or an airport layout plan that reflects the anticipated growth of the airport during the next 20 years (PUC Section 21675(a)). ALCUPs address the safety and noise standards and impacts and require development of existing and future aircraft noise contour maps. As described in Section 3.12.4.2, the Project is not located within the planning area of any ALUCP.

3.12.2.3 Local

The County of Santa Clara regulates noise through implementation of its Ordinance Code and through implementation of its General Plan Safety and Noise Chapter, and Health Element. The Safety and Noise Chapter establishes interior and exterior noise compatibility standards for various land uses as well as recommended maximum interior noise levels for intermittent use. These standards are used to assess the appropriateness of siting and design of new land uses within the County.

County of Santa Clara General Plan

The County of Santa Clara General Plan Safety and Noise Chapter and Mineral Resources Chapter contain the following strategies, policies, and implementation actions with regard to noise:

> ***Policy C-HS 24:*** Environments for all residents of Santa Clara County free from noises that jeopardize their health and well-being should be provided through measures which promote noise and land use compatibility.
>
> ***Policy C-HS 25:*** Noise impacts from public and private projects should be mitigated.
>
> Implementation Recommendations:
>
> *C-HS(i) 23:* Project design review should assess noise impacts on surrounding land uses.
>
> *C-HS(i) 24:* Where necessary, construct sound walls or other noise mitigations.
>
> *C-HS(i) 25:* Prohibit construction in areas which exceed applicable interior and exterior standards, unless suitable mitigation measures can be implemented.
>
> *C-HS(i) 26:* Require project-specific noise studies to assess actual and projected dB noise contours for proposed land uses likely to generate significant noise.
>
> *C-HS(i) 27:* Take noise compatibility impacts into account in developing local land use plans.
>
> ***Policy C-HS 26:*** New development in areas of noise impact (areas subject to sound levels of 55 DNL or greater) should be approved, denied, or conditioned so as to achieve a satisfactory noise level for those who will use or occupy the facility (as defined in "Noise Compatibility Standards for Land Use" and "Maximum Interior Noise Levels for Intermittent Noise" [see **Table 3.12-1**]).

Policy R-RC 77: Noise impacts to residences along haul routes should be reduced to the maximum extent possible. Sound barriers should be erected where necessary to minimize truck noise impacts on private residences located near quarry access points to public roads.

TABLE 3.12-1
RECOMMENDED MAXIMUM INTERIOR NOISE LEVELS FOR INTERMITTENT NOISE

Land Use Category	Land Use Type	Maximum Interior Noise Level (dBA)
Residential	Single Family Residential	45
	Multi-Family Residential	45
Commercial	Hotel-Motel	45
	Executive Offices, Conference Rooms	55
	Staff Offices	60
	Restaurant, Market, Retail Stores	60
	Sales, Secretarial	65
	Sports Arena, Bowling Alley, etc.	75
Industrial	Offices (same as above)	55-60
	Laboratory	60
	Machine Shop, Assembly and others	75
	Mineral Extraction	75
Public or Semi-Public Facility	Concert Hall and Legitimate Theater	30
	Auditorium, Movie Theater, and Church	45
	Hospital, Nursing Home and Firehouse (Sleeping Quarters)	45
	School Classroom	50
	Library	50
	Other Public Buildings	55

SOURCE: County of Santa Clara 1994.

County of Santa Clara Noise Ordinance

The County noise ordinance, Title B, Division B11, Chapter VIII of the County of Santa Clara Ordinance Code, was established to control unnecessary, excessive, and annoying noise and vibration, and to maintain quiet in those areas that exhibit low noise levels and to implement programs aimed at reducing noise in those areas where noise levels are above acceptable values. The ordinance generally prohibits any sound that endangers or injures the safety or health of human beings or animals, annoys or disturbs a person of normal sensitivities, or endangers or injures personal or real properties. The ordinance gives the County Director of Environmental Health discretion to grant variances from the County's noise standards if the director determines that the activity will not create a nuisance and will not be detrimental to the public health and safety. The director may impose conditions that are reasonable and necessary to protect public health, safety and welfare from adverse noise effects.

Exterior Noise Standards

The County of Santa Clara noise ordinance establishes exterior noise levels not to be exceeded on another property for more than 30 minutes in a given hour (L_{50}). These standards are presented in

Table 3.12-2. If the noise measurement occurs on a property adjoining a different land use category, the noise level limit applicable to the lower land use category, plus 5 dB, applies. In the event the alleged offensive noise contains a steady, audible tone such as a whine, screech or hum, or contains music or speech conveying informational content, the standard limits are to be reduced by 5 dB.

TABLE 3.12-2
COUNTY OF SANTA CLARA NOISE ORDINANCE EXTERIOR NOISE LIMITS

Receiving Land Use Category	Time Period	Maximum Exterior Noise Level (dBA L_{50})
One- and Two-Family Residential	10:00 p.m. - 7:00 a.m. 7:00 a.m. - 10:00 p.m.	45 55
Multiple-Family Dwelling	10:00 p.m. - 7:00 a.m.	50
Residential Public Space	7:00 a.m. - 10:00 p.m.	55
Commercial	10:00 p.m. - 7:00 a.m.	60
	7:00 a.m. - 10:00 p.m.	65
Light Industrial	Any Time	70
Heavy Industrial	Any Time	75

SOURCE: County of Santa Clara Code Chapter VIII, Section B11-152.

Per Section B11-152(3), if the measured ambient level exceeds that permissible within any of the first four noise limit categories listed in Table 3.12-2, the allowable noise exposure standard will be increased in five dB increments in each category as appropriate to encompass or reflect the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under the category will be increased to reflect the maximum ambient noise level.

Interior Noise Standards

The County has interior noise standards; however, they do not apply to the Project. For multi-family residential units, the County noise ordinance establishes interior noise level standards. Between the hours of 10:00 p.m. and 7:00 a.m. a maximum interior noise levels standard of 35 dBA applies, while between the hours of 7:00 a.m. and 10:00 p.m. a maximum interior noise levels standard of 45 dBA applies.

Construction Noise Standards

The County noise ordinance contains separate standards for addressing noise from construction and demolition. First, the noise ordinance establishes allowable hours of construction. Specifically, operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekdays and Saturday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, that creates a noise disturbance across a residential or commercial real property line is prohibited, except for emergency work of public service utilities or by variance.

Secondly, the County noise ordinance requires construction activities to be conducted, where technically and economically feasible, in a manner that noise levels at affected properties not exceed certain levels. The ordinance establishes noise level standards for affected properties for both mobile and stationary equipment. These standards are presented in **Table 3.12-3**. The County noise ordinance also contains an exemption for the emission of sound in the performance of emergency work.

TABLE 3.12-3
COUNTY OF SANTA CLARA NOISE ORDINANCE STANDARDS FOR CONSTRUCTION EQUIPMENT

	Single- and Two-Family Dwelling Residential Area (dBA)	Multifamily Dwelling Residential Area (dBA)	Commercial Area (dBA)
Mobile Equipment			
Daily, except Sundays and legal holidays 7:00 a.m.-7:00 p.m.	75	80	85
Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50	55	60
Stationary Equipment			
Daily, except Sundays and legal holidays 7:00 a.m.-7:00 p.m.	60	65	70
Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50	55	60

SOURCE: County of Santa Clara Code Chapter VIII, Section B11-154(b)(6).

Vibration

The noise ordinance prohibits operating or permitting the operation of any device that creates a vibrating or quivering effect that endangers or injures the safety or health of human beings or animals; annoys or disturbs a person of normal sensitivities or endangers or injures personal or real properties. Quantitative vibration standards are not established in the County Ordinance Code.

County of Santa Clara Surface Mining Regulations

The County's surface mining supplemental use regulations are established in Section 4.10.370 of the County Zoning Code. Part II of this code section contains the following County regulations with respect to noise and vibration:

a. Noise and ground vibration shall be mitigated to a level of insignificance in the absence of an approved Statement of Overriding Considerations pursuant to CEQA. To achieve this, loading points shall not be located closer than 30 feet to any property line, unless otherwise permitted by the Planning Commission.

b. Noise attenuation measures shall be installed where necessary to reduce noise levels in order to comply with noise standards of the County General Plan and Noise Ordinance.

c. Use of explosives (blasting) in operations shall be noted on the permit application and subject to Planning Commission conditioning, and shall comply with the noise and vibration standards of the County Noise Ordinance.

3.12.3 Environmental Setting

Transportation sources, such as automobiles, trucks, trains, and aircraft, are the principal sources of noise in the Project environs. Primary noise sources in the immediate vicinity of the Project site include traffic on the network of highways and local streets, including U.S. 101 and State Route 129 (SR 129). There is also an active quarry, the Graniterock Aromas Transportation Division, located approximately 3 miles to the southwest that generates truck traffic onto these two highways.

The area surrounding the Project site is characterized as open space with low-density rural residences, a small subdivision to the south along SR 129, Betabel RV Park to the east, and rural residences to the north and northeast. Suburban homes and a school are located about 3 miles north of the site in the City of Gilroy.

A noise monitoring survey was conducted in November 2016 (Appendix J.1) and is representative of existing ambient noise levels at receptors near the Project site. Three unattended long-term noise measurements and three attended short-term noise measurements were made to document existing noise levels representative of the nearest residential and other noise sensitive receptors. Long-term measurements of hourly average noise levels and other metrics were used to establish the existing noise levels in terms of the Ldn noise metric. Short-term noise measurements characterize typical daytime noise conditions and were also used to validate the traffic noise model used in the impact analysis (Appendix J.4). A summary of the results of the three long-term noise measurements is shown in **Table 3.12-4**.

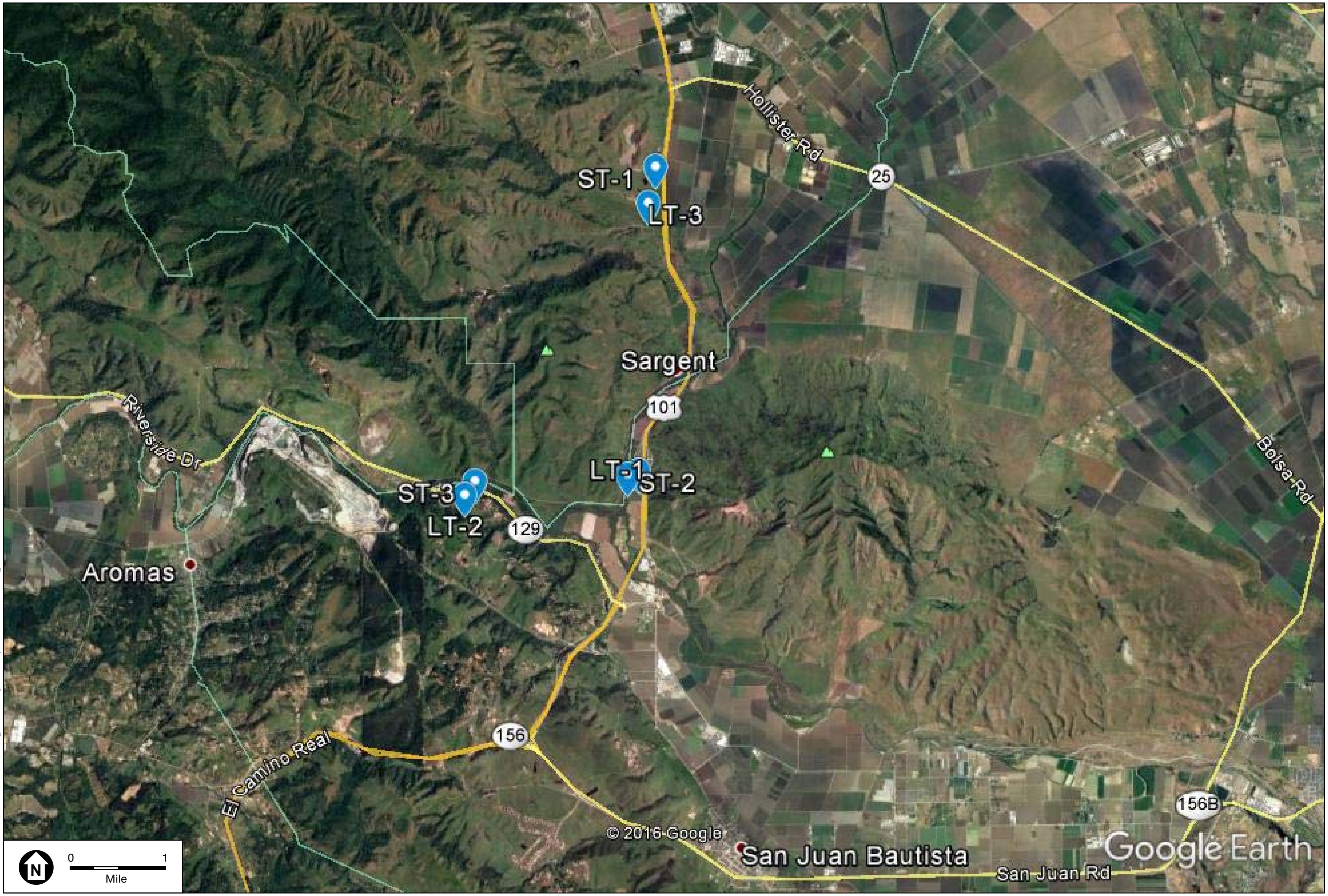
TABLE 3.12-4
LONG-TERM NOISE DATA

Location	L_{dn}[a]	L_{eq}[b]	Primary Noise Sources (L_{max})
LT-1: West of Betabel RV Park	59	48 to 56	U.S. 101 and existing noise at Betabel RV Park
LT-2: Near residences in the vicinity of School Road and Payne Road	62	51 to 63	Traffic on SR 129
LT-3: Old Monterey Road, west of U.S. 101	66	54 to 63	Traffic on U.S. 101

NOTES:
[a] L_{dn}: the day-night average noise level
[b] L_{eq}: the daytime weekday hourly average noise levels

SOURCE: Appendix J.1.

Noise levels at the long-term locations were measured from the afternoon of Wednesday, November 16, 2016, to the afternoon of Friday, November 18, 2016. Short-term measurements were made on Friday, November 18, 2016. Locations of the measurements are shown in **Figure 3.12-2**. The closest sensitive receptors to proposed mining areas are residences in the Betabel RV Park on Betabel Road (measurement location LT-1 in Figure 3.12-2) and a single-family residence located approximately 1,600 feet east of the Project site. Several single-family residences are located approximately 5,000 feet south of the Phase 3 and Phase 4 mining areas on SR 129.



SFO/19xxxx/D191577.00 - SCC Sargent Quarry/05 Graphics-GIS-Modeling/Illustrator

SOURCE: Illingworth & Rodkin, Inc. Sargent Quarry Environmental Noise Assessment, Santa Clara County, CA. February 9, 2017

SCC Sargent Quarry

Figure 3.12-2
Noise Measurement Locations

ESA

Additionally, there is one noise-sensitive residence located along the routes proposed to be widened and/or repaved on Old Monterey Road and the private access road. This residence is located immediately north of the southbound U.S. 101 off-ramp to Old Monterey Road, approximately 400 feet from the northernmost roadway improvements (measurement location LT-3 in Figure 3.12-2). This residence would be approximately 6,000 feet from the proposed 0.25-mile-long acceleration lane for trucks accessing northbound U.S. 101 that would be installed as part of the Project on the east side of the Sargent Ranch on-ramp to U.S. 101 and approximately 7,000 feet from the proposed widening and repaving of the Sargent Ranch undercrossing of U.S. 101.

Three short-term noise measurements were made in areas surrounding the quarry site between 9:00 a.m. and 10:00 a.m. A summary of the results of the short-term measurements is shown in **Table 3.12-5**.

TABLE 3.12-5
SHORT-TERM NOISE DATA

Location	L_1	L_{10}	L_{50}	L_{90}	L_{max}	L_{eq}	Noise Sources (L_{max})
ST-1: Entrance to Quarry (see LT-3)	66	64	62	59	67	62	U.S. 101 and local traffic on Old Monterey Road
ST-2: Northeast corner of Betabel RV Park (see LT-2)	59	55	51	48	62	52	U.S. 101 and ramps, distant heavy equipment
	59	54	51	49	59	52	
ST-3: Homes along SR 129, (see LT-1)	76	72	62	42	78	68	Traffic on SR 129

SOURCE: Appendix J.1.

3.12.4 Impact Evaluation

3.12.4.1 Approach to the Analysis

The following describes the methodology used to evaluate the impacts of Project site development relative to the significance criteria listed in Section 3.12.4.2.

Increase in Noise in Excess of Established Standards

The first significance criterion examines whether Project construction and/or operation would generate noise in excess of established noise standards, which are different for stationary, mobile, and construction noise sources. Project construction- and reclamation-related noise was evaluated based on County noise ordinance standards for affected properties for both mobile and stationary equipment. These standards are presented in Table 3.12-3. Increases in ambient noise levels from stationary sources during Project operation were evaluated in relationship to the General Plan policies and noise ordinance limits provided in Section 3.12.2, *Regulatory Setting*. The contribution of the Project to localized increases in traffic-generated noise along roadways (Impact 3.12-1c) was considered relative to published measures of substantial increases in transportation noise, as discussed below. Each of these approaches is described further below.

Construction Noise

The County of Santa Clara Code Chapter VIII, Section B11-154(b)(6) establishes quantitative noise standards for construction noise, which are presented in Table 3.12-3. Project construction would include the processing plant, the conveyor belts, roadway widening and repaving, internal access roads including construction of bridges over two creeks, and the proposed new acceleration lane for trucks accessing northbound on U.S. 101. Construction of these components would be temporary, occurring over approximately 9 months. All construction activities would take place between 7:00 a.m. and 5:00 p.m., Monday through Saturday, consistent with the County Code Section B11-154(b)(6). While mining and reclamation activities are similar to construction activities in terms of equipment used, they would be ongoing throughout the life of the Project, and are therefore, assessed as operational noise sources.

Construction-related noise levels were estimated for a peak construction scenario using the off-road equipment inventory provided by the Applicant for each of the construction projects mentioned above. Noise levels were calculated for the closest receptor at a variety of distances using the Roadway Construction Noise Model of the Federal Highway Administration (FHWA 2006). The analysis also uses the general assessment methodology for assessing construction noise impacts published by the Federal Transit Administration (FTA) (FTA 2018). The FTA methodology calls for estimating a combined noise level from the simultaneous operation of the two noisiest pieces of equipment expected to be used in each construction phase. This method applies usage factors to each piece of equipment analyzed to account for the time that the equipment is in use over the specified time period. Estimated noise levels at the nearest receptor are then compared to the quantitative standards for construction noise presented in Table 3.12-3 to assess significance.

Stationary-Source Noise

Mining, processing, and reclamation activities would result in a significant noise impact if exterior noise levels generated by the Project would exceed noise ordinance limits presented in Table 3.12-2. Additionally, the County's Surface Mining requirements include restrictions on loading point locations (no closer than 30 feet to any property line), restrictions on blasting activities, and inclusion of any noise attenuation measures necessary to meet the noise ordinance limits. A three-dimensional noise propagation model (SoundPLAN Version V7.4) was used to calculate noise levels assuming full operation of each of the four mining phases.

Project-Generated Traffic Noise

The County of Santa Clara does not establish thresholds for assessing Project impacts due to increased traffic noise. Guidance on the significance of transportation-related changes to ambient noise levels is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in ambient noise levels caused by aircraft operations (FICON 1992). The recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, they apply to all sources of transportation noise described in terms of cumulative noise exposure metrics such as the Ldn.

Table 3.12-6 presents criteria based on the FICON findings, which show that as ambient noise levels increase, a smaller increase in decibel levels is sufficient to cause significant annoyance. In other words, the quieter the ambient noise level, the more the noise can increase (in decibels) before it causes significant annoyance. The 5 dBA and 3 dBA noise level increases listed in Table 3.12-6 also correlate directly with noise level increases that Caltrans considers to represent "readily perceptible" and "barely perceptible," respectively, for short-term noise increases (Caltrans 2013). Thus, the significance of permanent increases in transportation noise levels is evaluated based on the increases identified in Table 3.12-6, below.

TABLE 3.12-6
MEASURES OF A SUBSTANTIAL INCREASE IN TRANSPORTATION NOISE EXPOSURE

Ambient Noise Level without Project (DNL)	Significant Impact Assumed to Occur if Project Site Development Increases Ambient Noise Levels by:
<60 dB	+ 5.0 dB or more
60–65 dB	+ 3.0 dB or more
>65 dB	+ 1.5 dB or more[a]

NOTES:
dB = decibels; DNL = day-night average noise level
[a] According to the Federal Interagency Committee on Noise report, the 1.5 A-weighted decibel (dBA) increase in environments that exceed 65 dBA is not necessarily a significant increase but, rather, an increase warranting further investigation.
SOURCE: FICON 1992.

Traffic noise levels were modeled using the algorithms of the Traffic Noise Model of the Federal Highway Administration based on existing and proposed traffic volumes provided by Hexagon Transportation Consultants (Appendix K). The resulting Project traffic noise levels were then compared to the modeled existing traffic noise conditions to determine if there would be an increase in ambient noise levels that could result in a significant impact (Appendix J.4).

Groundborne Vibration

Impacts from groundborne vibration during Project site construction and mining operations are assessed in Impact 3.12-2 using vibration-damage threshold criteria expressed in PPV for architectural damage. Equipment or activities that typically generate continuous vibration include but are not limited to excavation equipment, static compaction equipment, vibratory pile drivers, pile-extraction equipment, blasting, and vibratory compaction equipment.

Construction and operational vibration impacts are analyzed in terms of the potential of mining-related vibrations to result in damage to nearby structures or buildings as established by Caltrans (Caltrans 2020). The Caltrans thresholds for potential architectural damage due to groundborne vibrations is 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings.

Vibration impacts were estimated using reference vibration levels for construction equipment in concert with the vibration propagation equations published by FTA (FTA 2018) and estimating the potential for resultant vibration levels in excess of criteria established by Caltrans (Caltrans 2020).

3.12.4.2 Significance Criteria

Consistent with CEQA Guidelines Appendix G, the Project would result in a significant impact on noise and vibration if it would:

a) Generate 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) Generate excessive groundborne vibration or groundborne noise levels; or

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, expose people residing or working in the project area to excessive noise levels.

For criterion (a), a significant impact would occur if the noise levels identified in Table 3.12-6 would be exceeded.

Due to the nature of the Project, the following criterion is not analyzed in this section for the reasons described below:

- ***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, expose people residing or working in the project area to excessive noise levels.*** The FAA states airports are considered compatible with all land uses when aircraft noise effects are less than 65 decibels (dB) CNEL (14 CFR Section 150 Appendix A to Part 150 Section A150.101(d)). The closest airports to the Project are the Frazier Lake Airpark, located approximately 5 miles east, the Hollister Municipal Airport, located approximately 7 miles southeast, and the South County Airport (San Martin), located approximately 11 miles north of the site. The Santa Clara County Airport Land Use Commission's Comprehensive Land Use Plan for South County Airport indicates that the Project site is not located in the Airport Influence Area (County of Santa Clara 2020). The Project site is also outside of the influence areas and 65 dB CNEL contours for the Frazier Lake Airpark and the Hollister Municipal Airport (San Benito County Airport Land Use Commission, 2012 and 2019). Because the Project site is located outside of the 65 dB CNEL for these airports, no Project-specific or cumulative impacts would occur.

3.12.4.3 Project Impacts

Impact 3.12-1: Project construction would result in temporary increases in ambient noise levels in the Project vicinity. (Less than Significant)

This impact addresses Significance Criterion (a) with respect to temporary noise increases due to construction.

Construction

All construction activities would take place between 7:00 a.m. and 5:00 p.m., Monday through Saturday. The Roadway Construction Noise Model was used to estimate noise generated by construction activities. Construction noise levels were calculated for each construction project based on the equipment list provided in Table 2-2 in Chapter 2, *Project Description*.

Table 3.12-7 presents the results of the construction noise modelling effort showing the predicted noise levels at the nearest sensitive land uses. Project construction closest to a sensitive receptor would be the repaving of Old Monterey Road, the northern portion of which is approximately 400 feet from the nearest receptor. All other construction projects would be 3,000 feet or greater from the nearest receptors. As shown in Table 3.12-7, daytime noise levels would range from 60 dBA at the residence closest to the processing plant to 64 dBA at the residence closest to the Old Monterey Road improvements. The increase over existing noise levels at sensitive receptors would range from 0 to 2 dBA. Because the noise levels would be below the County's daytime standard for mobile construction equipment of 75 dBA Leq at the nearest receptors, construction noise would be **less than significant**.

Mitigation: None required.

Significance: Less than Significant

Impact 3.12-2: Project operations would permanently increase ambient noise levels in the vicinity of the Project. (Less than Significant)

This impact discussion addresses Significance Criterion (a) with respect to Project operations and reclamation.

Operation

Mining Pits

Mining operations are proposed to occur year-round between the hours of 6:00 a.m. and 5:00 p.m. Mining equipment would include excavators, dozers, trucks, graders, and loaders.

SoundPLAN version V7.4 was used to calculate noise levels during Project operation. Because mining equipment typically generates steady noise levels while in operation, the most restrictive noise limit for the purposes of this assessment is the L50 (the noise level exceeded 30 minutes in any hour). For steady noise, the L50 noise limit is the lowest noise limit and would be exceeded before any of the other noise limits contained in the County code (L25, L08, or L02 limits).

The L50 noise levels generated assuming peak operating conditions (i.e., 10 hours per day, 310 days per year) were calculated for each phase of operation at each of the nearest noise-sensitive receptor locations. To be conservative, simultaneous operation of all proposed mining equipment at each of the mining sites was assumed during peak operation of each phase of the Project:

- CAT Dozer (1);
- CAT Excavator (1);
- CAT Haul Truck (2);
- CAT Wheel Loader (1); and
- CAT Motor Grader (1).

TABLE 3.12-7
DAYTIME NOISE LEVELS FROM CONSTRUCTION PROJECTS

Representative Receptor	Existing Daytime Noise Level (dBA Leq)[a]	Two Loudest Noise Sources	Reference Noise Level (dBA)[a]	Distance to Receptor[b] (feet)	Usage Factor	Adjusted L_{eq} Level (dBA)[c]	Exceed 75 dBA daytime standard?	Existing + Construction Resultant Noise Level (dBA)[d]
Roadway Improvement: Old Monterey Road								
Residence F	62	Bulldozer	82	400	40%	60	No	
		Roller	80	400	20%	55	No	
		Combined Total				61	No	64
U.S. 101 Acceleration Lane Construction								
Residence F	62	Bulldozer	82	6,000	40%	36	No	
		Roller	80	6,000	20%	31	No	
		Combined Total				37	No	62
Processing Plant Construction and Tar Creek Bridge Construction								
Residence E	60	Crane	81	3,000	16%	37	No	
		Excavator	81	3,000	40%	41	No	
		Combined Total				43	No	60

NOTES:
a L_{max} at 50 feet
b Distance between approximate location of equipment and property line of receptor.
c The L_{eq} level is adjusted for distance and percentage of usage.
d Logarithmic sum of existing noise level and construction equipment contribution is the resultant noise level.

SOURCE: Appendix J.1.

Additionally, as a conservative assumption, equipment was assumed to operate on the top of the existing grade. As each area is mined, additional shielding would be provided by the surrounding terrain, resulting in lower noise levels than those predicted below.

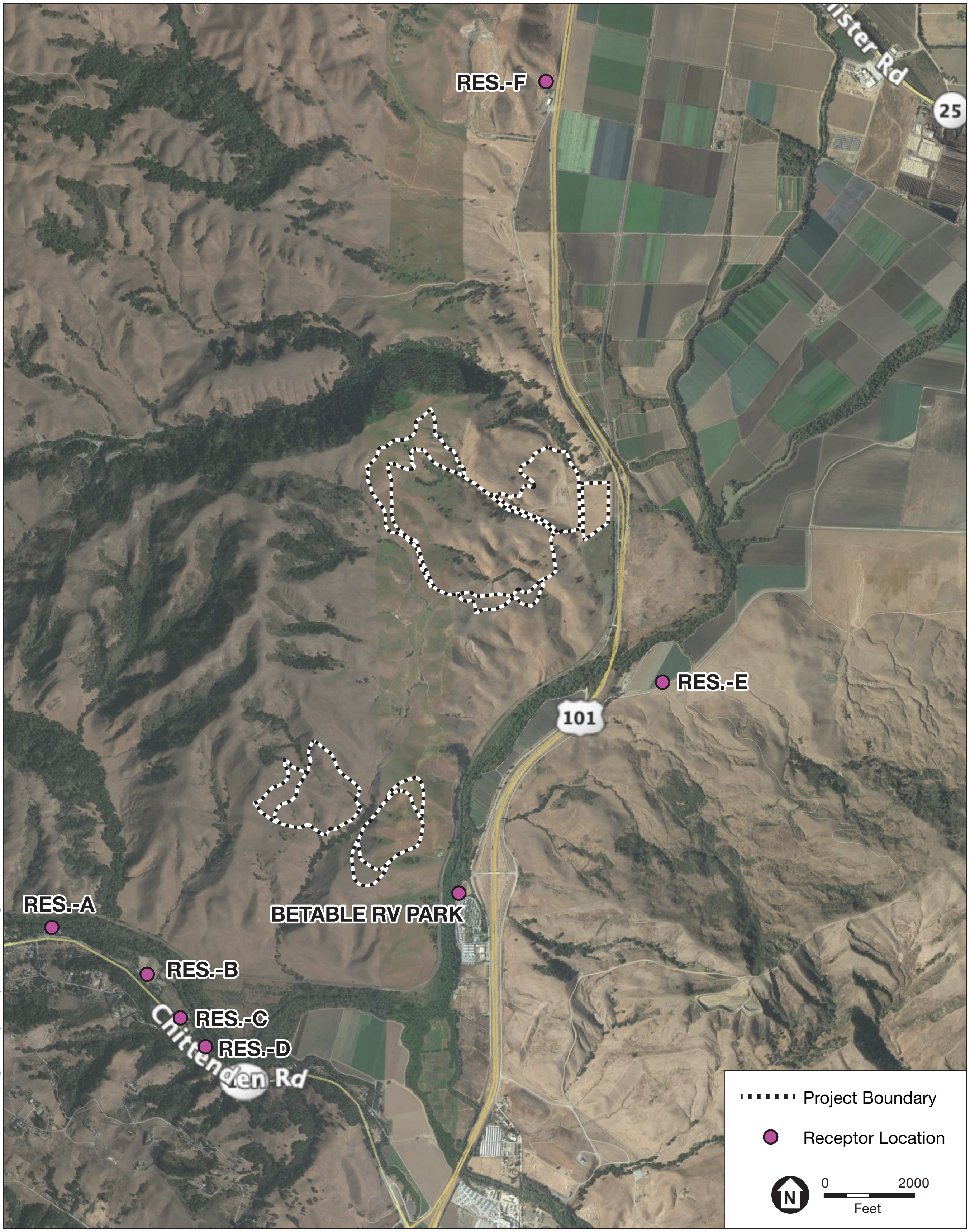
The analysis focuses on the six nearest residential receptors and the Betabel RV Park shown in **Figure 3.12-3**. The modeled operational noise levels at the nearest receptors are shown in **Table 3.12-8**, along with the measured ambient traffic noise levels. Noise level increases above existing ambient levels are shown in **Table 3.12-9**. For a visual presentation of the data as noise contours generated by each mining phase, see Figures 5 through 8 in Appendix J.1.

Mining-related noise levels would be 46 dBA or less at noise-sensitive receptors for all four mining phases and processing operations in the vicinity of the Project during operation, with most operations generating noise levels below 30 dBA at these receptors. When these noise levels are added to existing modeled ambient noise levels, there would be little or no change in perceptible noise. At one receptor, there would be no measurable change in ambient noise levels. In one case there would be slight increase: 1 dBA at Betabel RV Park during Phase 4 mining.

Noise generated by Project mining operations of 46 dBA, L_{50} would be well below ambient noise levels and below the most conservative daytime 55 dBA L_{50} criterion for one- and two-family residences.

Mining operations would also be conducted during the “nighttime” hours of 6:00 a.m. to 7 a.m. The applicable exterior noise standard for noise limit for one- and two-family residences during nighttime hours is 45 dBA L_{50} unless the existing ambient noise level already exceeds this standard. Section B11-153(3) of the County Code provides that, if the measured ambient level exceeds that permissible level, the allowable noise exposure standard will be increased in five dB increments to encompass or reflect the ambient noise level. As indicated in Table 3.12-8, the existing ambient noise levels exceed 45 dBA, L_{50} at all receptor locations. The lowest existing ambient level recorded was at Betabel RV Park with a 24-hour average L_{50} of 52 dBA and an average L_{50} during the 6:00 a.m. to 7:00 a.m. hour of 56 dBA. Therefore, per Section B11-153(3) of the County Code, adding 5 dBA increments to encompass the existing ambient noise level results in an applicable noise standard would be 55 dBA, L_{50}.which is the same as the daytime standard. Noise generated by Project mining operations of 46 dBA, L_{50} would be well below ambient noise levels and below the applicable nighttime 55 dBA L_{50} criterion for one- and two-family residences.

As indicated in Table 3.12-9, Project operation would not result in substantial increases in the noise environment at sensitive receptors above existing noise levels during either daytime hours or the 6:00 a.m. to 7:00 a.m. nighttime work hour (increases would be 1 dBA or less). As stated above in Section 3.12.1.1, it is widely accepted that the average healthy ear can barely perceive changes in the noise level of 3 dBA. Therefore, while mining of the closest points of the Phase 4 area would exceed the 45 dBA L_{50} nighttime criterion, the resultant 1 dBA increase over existing ambient noise levels would not be noticeable to the nearest potentially impacted receptor (Betabel RV Park) and, consequently not represent a significant noise impact.



SOURCE: Illingworth & Rodkin, Inc. Sargent Quarry Environmental Noise Assessment, Santa Clara County, CA. February 9, 2017; Google Earth

SCC Sargent Quarry

Figure 3.12-3
Receptor Locations

ESA

TABLE 3.12-8
AMBIENT AND OPERATIONAL NOISE LEVELS (DBA)

Receptor	Ambient Noise Levels	Processing Plant	Phase 1	Phase 2	Phase 3	Phase 4
Project Operational Noise Levels, L_{50}						
Betabel RV Park	52[a]	30	26	28	31	46
Residence A	65	23	17	22	30	33
Residence B	55	25	19	22	34	32
Residence C	66	17	13	11	24	30
Residence D	53	41	37	31	30	30
Residence E	68	25	21	22	33	30
Residence F	71	31	24	26	10	15

NOTES:

a This is the average L50 noise level over a 24-hour monitoring period. The ambient noise level during the 6 a.m. to 7 a.m. hour was recorded to be 56 dBA, L50 during two separate days. This is higher than the 24-hour average likely as a result on morning peak hour traffic.

SOURCE: Appendix J.1.

TABLE 3.12-9
OPERATIONAL NOISE LEVELS AND INCREASES OVER AMBIENT CONDITIONS (DBA)

Receptor	Ambient Noise Levels	Ambient + Processing Plant	Ambient + Phase 1 + Processing Plant	Ambient + Phase 2 + Processing Plant	Ambient + Phase 3 + Processing Plant	Ambient + Phase 4 + Processing Plant
Ambient + Operational Noise Levels, L_{50}						
Betabel RV Park	52	52	52	52	52	53
Residence A	65	65	65	65	65	65
Residence B	55	55	55	55	55	55
Residence C	66	66	66	66	66	66
Residence D	53	54	53	53	53	53
Residence E	68	68	68	68	68	68
Residence F	71	71	71	71	71	71
	Significant Impact?	No	No	No	No	No
Project Increase Over Ambient Conditions						
Betabel RV Park	--	0	0	0	0	1
Residence A	--	0	0	0	0	0
Residence B	--	0	0	0	0	0
Residence C	--	0	0	0	0	0
Residence D	--	0*	0	0	0	0
Residence E	--	0	0	0	0	0
Residence F	--	0	0	0	0	0

NOTES:

* Noise levels are rounded to the nearest decibel. 53.5 (54) - 53.2 (53) = 0.3 (0)

SOURCE: Appendix J.1.

As discussed below in the next subsection, processing plant operation would generate additional noise levels of 41 dBA or less at noise-sensitive receptors, and this additional noise contribution from the simultaneous operation of the processing plant would not further increase the noise contributions from mining operations at any of the four phase locations, particularly given existing ambient highway noise at the receptors nearest the processing plant.

Table 3.12-8 further indicates that L_{50} levels resulting from the proposed Project would be 6 dBA lower than ambient levels at Betabel RV Park under processing and mining operations and as much as 61 dBA lower than ambient levels at the most distant receptors analyzed.

L_{max} levels of quarry equipment, which are typically about 10 dBA higher than L_{50} levels, would also be well below the County thresholds of 75 dBA L_{max} during the daytime and 65 dBA L_{max} at night at the residence locations.

The Project would be consistent with County of Santa Clara General Plan Policy C-HS 25 and Implementation Strategies C-HS(i) 23 (Project design review) and C-HS(i) 26 (Require project-specific noise studies to assess actual and projected dB noise contours for proposed land uses likely to generate significant noise) because the above acoustical analysis and the detailed acoustical study in Appendix J.1 demonstrate that the Project would not exceed the applicable thresholds at sensitive receptors. Further, operation of the mining pits would be consistent with the County's surface mining requirements established in Section 4.10.370 of the County of Santa Clara Zoning Code, which restricts loading point locations to no closer than 30 feet to any property line. As a result, the Project impact with respect to operation of the mining pits would be **less than significant**.

Processing Plant

During mining operations, excavated sand and gravel would be hauled via the conveyor belts to the processing plant. Excavated material would be mechanically sized, washed, sorted into stockpiles, and prepared for shipping at the processing plant. Some materials also would be crushed and sorted into stockpiles via radial stacker and conveyors. A total of 30 pieces of equipment would operate at the processing site, including hoppers, crushers, screens, conveyors, and stackers.

The noise levels shown in Tables 3.12-8 and 3.12-9 present the predicted noise levels and noise level increases associated with operation of the processing plant. These noise levels represent a conservative scenario for the operation of the processing plant, with all proposed processing equipment operating simultaneously, for a total of 30 individual pieces of equipment inclusive of conveyor systems. As shown in Tables 3.12-8 and 3.12-9, operation of the processing plant would not increase noise levels over ambient conditions at the sensitive receptors, with one exception. There would be a slight, imperceptible increase (0.3 dBA) at Residence D. Noise levels generated by operation of the processing plant would be below the applicable 55 dB, L50 exterior noise criteria of the County Code for daytime and nighttime operations. Processing plant operation would generate additional noise levels of 41 dBA or less at noise-sensitive receptors and this additional noise contribution from the simultaneous operation of the processing plant would not further increase the noise contributions from mining operations discussed above at any of the four phase locations, particularly given existing ambient highway noise at the receptors nearest the processing plant. Because it would not substantially increase noise levels at sensitive receptors, the impact of operation of the processing plant would be **less than significant**.

Project Traffic

Based on the traffic volumes provided by Hexagon Transportation Consultants (Appendix K), the 2017 noise analysis prepared by Illingworth & Rodkin (Appendix J.1) estimated that during peak quarry operations, the Project could result in up to 40 one-way truck trips during morning peak traffic hour to U.S. 101. A smaller number of Project trips would be added to SR 25.

At the time that the noise analysis was prepared in February 2017, U.S. 101 carried approximately 4,140 vehicle trips per peak hour, about 7.5 percent of which were trucks, and SR 25 carried about 2,200 vehicle trips per peak hour, with about 6.5 percent trucks, which represent pre-pandemic traffic volumes. Traffic noise levels were modeled using the algorithms of the Federal Highway Administration's Traffic Noise Model for the existing and existing-plus-Project scenarios. Assuming 100 percent of all truck trips allocated to U.S. 101 and 20 percent to SR 25 as indicated in the transportation analysis (Appendix K), roadside noise levels along U.S. 101 and SR 25 would increase by 0.3 dBA and 0.1 dBA, respectively. Therefore, the Project's additional peak-hour trips would generate a minor increase in traffic volumes along U.S. 101 and SR 25. Because the increase over existing traffic noise levels would not be perceptible (less than 1 dBA Ldn) at sensitive receptors along roadways serving the site, this impact would be **less than significant**.

Noise Increase along Existing Rail Line

The Project would transport processed aggregate via rail up to three times per week (adding additional rail cars to a maximum of one train per night) along the existing Union Pacific north-south rail line. Railcars containing Project aggregate would be attached to a train already traveling on that line, rather than requiring a new train serving only the Project. However, this analysis uses the impacts from an additional train as a proxy for increased numbers of cars on an existing train. This analysis is conservative because an additional train would produce more noise impacts than an increased number of cars.

The southern portion of the Union Pacific's Coast Subdivision currently carries an average of 10 passenger trains and four to six freight trains daily between San José and Gilroy, as well as two passenger trains and four to six freight trains daily between Gilroy and Salinas. The Caltrain Corridor, which travels between San José and San Francisco, currently carries an average of 96 weekday passenger trains and four freight trains daily.

Noise impacts from train movements were calculated by comparing noise from existing train movements to noise from existing plus mining-related train movements (see Appendix J.2). The criterion for assessment of rail noise assessment is the transportation noise criteria presented in Table 3.12-6, above. These criteria use the 24-hour Ldn metric, which applies a 10 dBA "penalty" to noise during the sensitive nighttime hours. Receptors potentially affected by increases in rail activity would be near monitoring locations LT-1 and LT-2, which are approximately 350 feet and 1,000 feet from the rail line, respectively. Monitored noise levels at these locations ranged from 59 to 62 Ldn (refer to Table 3.12-3). Consequently, based on the criteria presented in Table 3.12-6, a 3 dBA increase in noise levels would conservatively be considered a significant noise impact from transportation sources at these locations.

Long-term monitoring of noise adjacent to the rail line at monitoring location LT-1 indicates three separate noise events commensurate with rail activity between midnight and 3:00 a.m. on a Thursday and two events on a Friday. Based on the conservative assumption that the Project would add one additional nighttime rail operation, the rail noise analysis in Appendix J.2 indicates that the additional nighttime rail operation would increase the existing noise level by 2 dBA Ldn, conservatively assuming existing conditions of two daytime and two nighttime pass-by events. Therefore, increased rail activity would have a **less than significant** noise impact to receptors in the vicinity of the Project site.

Rail Spur

Connection of the loaded rail cars to a locomotive would occur on the proposed rail spur three time per week in a process that takes approximately 30 minutes. These slow rail car movements by locomotive would occur approximately 5,000 feet from the nearest receptor (Residence E). The CREATE Noise Model of the Federal Railroad Administration was used to estimate noise at this receptor from locomotive movements on the proposed rail spur (see Appendix J.3). Assuming locomotive operations of 20 miles an hour, locomotive noise on the spur would result in a noise level of 35 dBA, Leq at this nearest receptor. As shown in Table 3.12-8, the existing ambient at this receptor is 68 dBA. The addition of rail noise at this receptor would not increase the existing noise level at this receptor which is dominated by traffic on U.S.101. Therefore, noise generated by locomotive movements along the proposed rail spur would be **less than significant**.

Noise Impacts from All Project Operations

The Project would generate noise from mining of aggregate at the four mining areas, from operation of the processing plant, from increased rail cars on existing trains operations and increased haul truck traffic on local highways. While the County Code does not have the authority to regulate transportation sources such as truck and rail operations, the combined noise increase contribution of all these sources can be summed and the resultant noise increase over ambient levels evaluated for perceptibility at the nearest receptors. As indicated in Table 3.12-9, the combination of noise from mining of aggregate and from operation of the processing plant would increase existing noise levels at only one receptor (Betabel RV Park) and the increase would be 1 dBA. As discussed above, truck traffic increases on U.S. 101 would increase roadside noise levels by 0.3 dBA.

The addition of rail cars to existing operational trains to transport aggregate would not increase noise levels, but rather increase the duration of train pass-by events at receptors along the rail line that would not be expected to result in a perceptible increase in noise levels. As discussed above, locomotive noise on the rail spur would result in a noise level of 35 dBA, Leq at the nearest receptor, which would not increase the existing noise level at this receptor which is dominated by traffic on U.S.101. Therefore, the maximum noise increase at any one receptor would be approximately 1.3 dBA which would be a less than 3 dBA increase and the operation of cumulative Project sources would be **less than significant**.

Reclamation

Reclamation activities would occur at the end of mining in each phase, and intermittently for 5 years subsequent to each phase of mining. The location and equipment involved in regrading to achieve the final contours would be similar to that involved with quarrying of the mining pits. Therefore, the noise generated by reclamation activities would be similar to that presented for noise generated by the mining phases in Tables 3.12-8 and 3.12-9 and would not meaningfully contribute to an increase in noise levels at the nearest sensitive receptor. Revegetation and monitoring, which would occur sporadically for 5 years after the close of each phase, would involve up to two employees at one time, and would not require the use of heavy equipment. For these reasons, the noise impact from reclamation activities would be **less than significant**.

Summary

Noise levels from operation of the Project, including the processing plant, mining, rail line and traffic, would not exceed the applicable noise standards Therefore, the impact would be **less than significant**.

Mitigation: None required.

Significance: Less than significant

Impact 3.12-3: Use of conventional earth moving equipment during construction, operation, and reclamation could generate groundborne vibration and groundborne noise levels. (Less than Significant)

This impact addresses Significance Criterion (b).

Construction, Operation, and Reclamation

The Project does not propose the use of blasting or other mining techniques that might result in significant levels of vibratory impacts. The Project would employ conventional earth moving equipment as part of both construction and mining operations, for which vibration levels are shown below in **Table 3.12-10**.

TABLE 3.12-10
VIBRATION SOURCE LEVELS FOR EQUIPMENT

Equipment	PPV at 25 feet (in/sec)
Clam Shovel Drop	0.202
Vibratory Roller Compactor	0.21
Hoe Ram	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Bulldozer	0.003

SOURCE: FTA 2018.

Use of heavy equipment, such as a vibratory roller or a clam shovel, would generate vibration levels of up to 0.21 in/sec PPV at a distance of 25 feet, which is below the Caltrans thresholds for potential architectural damage due to groundborne vibrations of 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings. The nearest sensitive receptors are located approximately 400 feet from Project construction (Old Monterey Road Improvements), and approximately 1,600 feet from Project operation. At these distances, vibration levels would be attenuated to well below the Caltrans thresholds for potential architectural damage to new residential structures, modern commercial buildings, and historic and older buildings. Consequently, vibration impacts from construction, operation, and reclamation would be **less than significant**.

Mitigation: None required.

Significance: Less than significant

3.12.4.4 Cumulative Analysis

As stated in Section 3.1, the geographic scope for the noise and vibration analysis is the Project site and adjacent parcels.

Impact 3.12-4: The Project would not result in a cumulatively considerable contribution to a significant noise or vibration impact. (Less than Significant)

The geographic scope of analysis for cumulative noise and vibration construction impacts encompasses sensitive receptors within approximately 1,000 feet of the Project site.[4] Beyond 1,000 feet, the contributions of noise from other projects would be greatly attenuated through both distance and intervening structures and their contribution would be expected to be minimal.

There is only one project within in the geographic scope of the cumulative noise impact analysis: the U.S. 101 Widening Upgrade Project. This project would widen U.S. 101 to six lanes between Gilroy and SR 129 in San Benito County, reconstruct the U.S. 101/SR 25 interchange, extend Santa Teresa Boulevard from Castro Valley Road to the U.S. 101/SR 25 interchange, improve the southbound U.S. 101 off-ramp at SR 129, grade-separate the Union Pacific Rail crossing on SR 25 west of Bloomfield Avenue, and construct bicycle facilities.

The widening of U.S. 101 could increase noise levels at the Betabel RV Park (at the vicinity of monitoring location LT-1). The May 2013 FEIR for the U.S. 101 Improvement Project from Monterey Street to S.R. 129 analyzes the noise impact of this freeway widening project during

[4] This screening threshold distance was developed based on stationary source noise attenuation equations (Caltrans 2013) and the combined noise level generated by typical construction phases for a given project (assuming multiple pieces of equipment) at a distance of 50 feet. Using the attenuation equations, the maximum noise level of 89 dBA for both excavation and finishing would diminish to below 65 dBA at 1,000 feet. A receptor experiencing noise levels of 89 dBA from two adjacent construction sites would experience a cumulative noise level of 91 dBA (the acoustical sum of 89 dBA plus 89 dBA), which would still be below 65 dBA at 1,000 feet which, hence, is used as the geographic scope.

peak traffic hours (SCVTA, 2013). This document indicates that the resultant peak hour noise levels at the Betabel RV Park would increase to 60 dBA at the most westerly receptor analyzed for that project, approximately 280 feet from the highway. Using line source noise propagation, this noise contribution would decrease to 55 dBA at Receptor LT-1 (analyzed above in Impact 3.12-2), approximately 830 feet from the freeway. Given that the existing peak hour noise level monitored at LT-1 during the peak traffic hour 55 to 56 dBA (Illingworth and Rodkin, 2017), the widening of U.S. 101 would not further increase noise impacts at LT-1. As LT-1 is the only receptor that would experience an increase in noise level from project quarrying activities, as indicated in Table 3.12-9, quarrying operations would not result in a cumulatively considerable contribution at any of the other receptors analyzed above in impact 3.12-2.

In addition, under cumulative conditions, traffic volumes on U.S. 101 and SR 25 would increase, which would increase traffic noise levels along those roadways. Cumulative traffic noise levels for year 2040 were modeled based on traffic volumes provided by Hexagon Transportation Consultants (Appendix K) including the addition of Project traffic. The difference in roadside noise levels between the cumulative-plus-Project scenario and existing conditions would be 1.2 dBA Ldn along U.S.101 and 1.0 dBA Ldn along SR 25. This cumulative noise increase would be less than 3 the dBA Ldn threshold, so the cumulative traffic noise impact would be less than significant.

In combination, the increase noise from cumulative traffic volumes and reducing the distance to U.S. 101 from Betabel RV Park would result in an increase of 1.4 dBA Ldn at the Betabel RV Park receptors closest to U.S. 101. This cumulative noise increase would be less than the 3 dBA Ldn threshold, and Project would contribute only slightly to cumulative traffic levels, so the cumulative traffic noise impact would be less than significant, and the Project's contribution would not be cumulatively considerable, considering both the widening of U.S. 101 and future increases in traffic volumes.

With respect to rail use, there are no cumulative projects in the vicinity of the Project site that would add to rail activity. The cumulative roadway traffic noise increase described above from the widening and cumulative traffic would add an estimated 1.4 dBA Ldn at the Betabel RV receptor to U.S. 101. However, the receptors nearest to the rail line are another 500 feet from U.S. 101, and these noise contributions from the highway would be attenuated by intervening RVs.

As discussed in Impact 3.12-3, the nearest sensitive receptors are located approximately 400 feet from Project construction (Old Monterey Road Improvements) which would be a more than sufficient distance for vibration propagation to reduce resultant vibration levels to below the building damage thresholds. Unlike the analysis for average noise levels, in which noise levels of multiple pieces of equipment can be combined to generate a maximum combined noise level, instantaneous peak vibration levels do not combine in this way. Vibration from multiple construction sites, even if they are located close to one another, would not combine to raise the maximum PPV. For this reason, the cumulative impact of construction vibration from the project and the U.S. 101 Widening Upgrade Project (were they to occur simultaneously and near one another) would generally not combine to further increase vibration levels. In essence, vibration effects are highly localized Therefore, the cumulative vibration impact would be less than significant, and the Project's contribution would not be cumulatively considerable.

For these reasons, the Project's contribution to cumulative noise and vibration impacts would not be cumulatively considerable and would therefore be **less than significant**.

Mitigation: None required.

Significance: Less than significant

3.12.5 References

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3.13 Transportation

3.13.1 Introduction

This section addresses the impacts of the Project on transportation. This includes discussion of any inconsistency with plans, ordinances, and policies governing the circulation system; vehicle miles traveled (VMT); hazards from geometric design features; and emergency access. The section first describes the existing environmental setting for transportation facilities and the applicable regulatory framework, then describes the approach to the analysis and evaluates the transportation impacts of Project construction and operation. Mitigation measures are identified if feasible to avoid or reduce significant impacts.

The information in this section is based in part on a Transportation Impact Analysis (TIA) prepared by Hexagon Transportation Consultants, Inc. in February 2017,[1] and a Construction Traffic Impact Evaluation prepared by Hexagon Transportation Consultants, Inc. in March 2021. These reports are included as Appendix K to this EIR. The TIA was prepared prior to July 1, 2020, which is the date on which CEQA Guidelines Section 15064.3(b) became effective statewide and replaced the transportation metrics of delay and Level of Service (LOS) with VMT. While no longer used to determine the significance of transportation impacts, the intersection, freeway/highway segment, and freeway ramp analyses provided in the TIA may still be used as a planning tool by the County.

The County received scoping input from the California Department of Transportation (Caltrans) regarding its jurisdiction with respect to U.S. 101 and recommended approaches to the technical transportation analysis to be conducted for the Project (Appendix A). The County reviewed and considered this input in preparing the TIA and Draft EIR.

3.13.2 Regulatory Setting

3.13.2.1 Federal

There are no federal laws or regulations regarding transportation that would apply to the Project.

3.13.2.2 State

California Department of Transportation

Caltrans manages interregional transportation, including management and construction of the California highway system. In addition, Caltrans is responsible for permitting and regulation of the use of state roadways. There are several facilities that fall under Caltrans jurisdiction near the Project site, including U.S. 101, State Route (SR) 25, and SR 129.

1 Since the 2017 TIA was prepared, the estimated number of trips associated with Project sales has been reduced slightly (from 300 trips per day to 278 trips per day), and the distribution throughout the day has changed as well, with a small number of sales-related trips occurring prior to 7:00 am rather than starting at 7:00 am. As a result, the TIA analyzes a slightly higher number of daily and a.m. peak hour trips than would occur under the Project as proposed. In addition, the number of total daily trips was estimated in the TIA to be 346 total daily trips, compared to 324 daily trips under the Project as proposed. For these reasons, the analysis in the 2017 is therefore considered conservative.

Modifications of Caltrans facilities, such as the proposed improvements to the U.S. 101 on-ramp, must meet standards identified in the Highway Design Manual, which includes specifications for lane width, design speed, lane length, curve radii, sight distance, and other features (Caltrans 2019a).

California Department of Transportation Encroachment Permits

Construction in facilities under Caltrans jurisdiction requires a Caltrans Encroachment Permit, which includes a Traffic Control Plan in compliance with the Manual on Uniform Traffic Control Devices (MUTCD) (Traffic Control Manual) (Caltrans 2014). As part of these requirements, there are provisions for coordination with local emergency services, training for flagmen for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitate crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles. MUTCD requirements also provide for construction work during off-peak hours and flaggers.

California Department of Motor Vehicles

Drivers of vehicles weighing over 13 tons and/or with 3 axles must have a Commercial Driver License (CDL) issued by the California Department of Motor Vehicles (DMV). Therefore, most haul trucks used to transport Project products would require a CDL to operate. The DMV has developed licensing and testing requirements to ensure that the safe operation of such vehicles. For example, all CDL drivers must know state laws limiting the size and weight of vehicles and loads and demonstrate ability to drive safely in a variety of traffic situations. In addition, DMV will revoke a CDL under certain circumstances, such as driving with a blood alcohol level of 0.04%, committing a serious traffic violation, such as excessive speeding or reckless driving, or violating the State's cell phone and texting laws. (CDMV, 2019-2021).

Senate Bill 743

The California Natural Resources Agency adopted CEQA Guidelines Section 15064.3(b) in December 2018 to implement Senate Bill (SB) 743. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts focus primarily on projects within transit priority areas and shift the focus from driver delay (i.e., level of service) to reduction of greenhouse gas (GHG) emissions, creation of multimodal networks, and promotion of a mix of land uses. The revisions require lead agencies to begin evaluating transportation impacts for automobiles based on VMT no later than July 1, 2020. VMT is a measure of the total number of miles driven to or from a project and sometimes is expressed as an average number of miles per trip or per person.

3.13.2.3 Regional

Plan Bay Area 2050

Plan Bay Area 2050 is a 30-year plan that provides thirty-five strategies to address housing, the economy, transportation and the environment across the Bay Area's nine counties — Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma. The plan was prepared by the Bay Area's two regional planning agencies, the Metropolitan

Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG). The final Plan was adopted by both agencies in October 2021. Because the Plan does not set specific requirements for individual projects, this EIR does not address consistency with Plan Bay Area 2050 strategies.

Valley Transportation Plan 2040

As the congestion management agency for Santa Clara County, the Santa Clara Valley Transportation Authority (VTA) is responsible for developing a long-range countywide transportation plan, called the Valley Transportation Plan (VTP) 2040 (VTA 2015). The projects included in the VTP serve as VTA's recommendations for inclusion in Plan Bay Area, which is the region's long-range strategic plan for transportation, housing, economy, and the environment, and the list of projects is updated on a 4-year cycle coinciding with updates to that plan. VTP 2040 provides programs, projects, and policies for roadways, transit, Intelligent Transportation Systems and Systems Operations Management, bicycle facilities, pedestrian facilities, and the integration of land use and transportation. The VTA Board of Directors adopted VTP 2040 in October 2014. The only VTP transportation project relevant to the Project is the construction of new Express Lanes on U.S. 101 between 10th Street in Gilroy and SR 25. These Express Lanes would terminate approximately 2.5 miles to the north of the Project site.

Congestion Management Program

As the congestion management agency for Santa Clara County, VTA also is authorized to set federal and state funding priorities for transportation improvements that affect the Santa Clara Congestion Management Program (CMP) transportation system. As discussed in Section 3.13.2.2, CEQA Guidelines Section 15064.3(b) requires lead agencies to evaluate transportation impacts based on VMT and no longer allows vehicle delay and LOS to be used to determine the significance of a transportation impact. Because the CMP is solely focused on vehicle delay and LOS transportation metrics, it is not discussed further in this EIR.

3.13.2.4 Local

County of Santa Clara General Plan

The County General Plan Transportation Chapter provides information about the County's transportation needs (County of Santa Clara 1994a, 1994b). The Plan also includes LOS standards for the County. Currently, the County's Policy C-TR 12 seeks to achieve LOS D or better, but acknowledges that this may not always be feasible. However, as explained above under Senate Bill 743, changes to LOS are not considered environmental impacts under CEQA. Therefore, these policies are addressed only in Appendix C, General Plan Consistency, and in Appendix K.1, which analyzes the Project's LOS impacts for the purpose of determining General Plan consistency.

The following transportation policies are included in the County's General Plan:

> ***Policy R-RC 78:*** Access to new quarry sites should make maximum use of major thoroughfares, such as expressways, freeways, and designated truck routes, avoiding

impacts upon local-serving routes. Where feasible, alternatives to truck transportation should be encouraged.

Policy R-TR 9: Rural roads should be designed and built to standards that will assure driving safety and provide access for emergency vehicles.

Policy R-TR 11: New development which would significantly impact private or public roads, should be allowed only when safety hazards and roadway deterioration will be mitigated to a less-than-significant level.

Policy R-TR 14: Environmental impacts of roadway construction and expansion should be mitigated to a less-than-significant level.

3.13.3 Environmental Setting

3.13.3.1 Regional Access

Regional access to the vicinity of the Project site is provided by U.S. 101 and SR 25. These facilities are described below, along with the most recently available peak hour and annual average daily traffic (AADT) volumes (Caltrans 2019b).

U.S. 101 is a north-south freeway traversing the State of California. North of the Monterey Street interchange in Gilroy, U.S. 101 is a six-lane freeway and transitions to a four-lane freeway south of that point, including in the vicinity of the Project site. Direct access to/from U.S. 101 to the vicinity of the Project site is provided via freeway ramps at Old Monterey Road. Peak hour and AADT on U.S. 101 near the Project site are approximately 6,000 vehicles and 63,000 vehicles, respectively.

SR 25 is a two-lane east-west highway that carries regional traffic between Gilroy and Hollister. It begins at its junction with U.S. 101 in Gilroy and extends southward through Hollister toward Paicines, providing regional access to/from the vicinity of the Project site to the east. The posted speed limit on SR 25 is 55 mph near its interchange with U.S. 101. Peak hour and AADT on SR 25 near the Project site are approximately 2,400 vehicles and 27,900 vehicles, respectively.

3.13.3.2 Local Access

Old Monterey Road is a two-lane north-south roadway that runs parallel to and west of U.S. 101 and provides direct access to the vicinity of the Project site. It begins at its ramps with U.S. 101, less than 1 mile south of the SR 25 overpass, and extends southward for approximately 0.5 miles to a gated entrance where it becomes a private roadway that provides access to the Project site. At its southern end, within the Project site, the private roadway extends eastward and under U.S. 101 to connect to northbound U.S. 101. For reference purposes, the private roadway that provides direct access to the Project site and to northbound U.S. 101 is referred to as the Old Monterey Road Extension. In addition to providing direct access to the Project site, Old Monterey Road also provides access to the former Freeman Quarry (now reclaimed), several farm equipment storage buildings, a fruit/vegetable stand, and a private residence.

Old Monterey Road is a narrow undeveloped roadway that is approximately 25 feet wide between the southbound freeway ramps and the Project site's proposed access gate and narrows to 20 feet or less south of the access gate. The segment of the Old Monterey Road Extension east of U.S. 101 was measured to be approximately 12 feet wide. Average daily traffic (ADT) volumes on Old Monterey were obtained from 24-hour machine counts collected for the Project in September 2016. The ADT along Old Monterey Road and Old Monterey Road Extension ranged from 15 to 45 vehicles.

The U.S. 101 southbound ramps at Old Monterey Road include a 500-foot deceleration lane and a 1,000-foot acceleration lane that facilitate access between Old Monterey Road and southbound U.S. 101. The U.S. 101 northbound on-ramp at the Old Monterey Road extension is approximately 12 feet wide with no shoulders, does not include an acceleration lane, and does not meet Caltrans standards under existing conditions.

3.13.3.3 Pedestrian, Bicycle, and Transit Facilities

Because the Project site is located in a rural unincorporated area of Santa Clara County, there are no other transportation facilities (such as sidewalks, bike lanes, bike routes, or transit services) near the Project site. Due to the location and nature of the Project, all trips generated by the Project would consist of passenger vehicles and trucks.

3.13.3.4 Rail Transport

A UPRR rail line runs generally parallel U.S. 101. In the vicinity of the Project site, the rail line is located adjacent to the eastern boundary of the processing plant site. There are no rail spurs or other rail lines in the Project vicinity.

3.13.3.5 Vehicle Miles Traveled

At present, the only traffic originating on the Project site would be intermittent trips associated with the cattle operation. Such traffic is not daily, and results in negligible VMT.

A framework for analyzing VMT impacts in the unincorporated area was recently prepared for the County of Santa Clara by WSP (WSP 2021). Using the VTA's VMT estimator tool, WSP calculated the average daily VMT per employee in rural areas to be 31.6 (WSP 2021).

3.13.4 Impact Evaluation

3.13.4.1 Approach to the Analysis

The Project would result in vehicle trips to the transportation network during Project construction and operation. In addition, it would construct the following transportation improvements, which are further described in Section 2.4.3, *Site Access and Vehicle Trips*, of the Project Description:

- private, internal access roadways and bridge;

- improvements to an existing U.S. 101 on-ramp east of Sargent Ranch to facilitate truck access;
- improvements to Old Monterey Road (i.e., new pavement and 3-foot-wide shoulders on either side of the roadway); and
- construction of a new rail spur that would connect to the existing Union Pacific Railroad (UPRR) tracks to the east of the Project site along U.S. 101.

Trip Generation

Construction

The peak of Project construction activity would occur during the concurrent construction of the Old Monterey Road improvements and the U.S. 101 northbound on-ramp acceleration lane. Each of these two construction activities would require crew sizes of up to 15 workers per day and up to 150 truck deliveries over the course of the entire 2- to 3-week overlap period. Based on the construction hours (7:00 a.m. to 5:00 p.m.), construction workers would arrive at the Project site before the a.m. peak hours (7:00 a.m. to 9:00 a.m.), but would depart the Project site during the p.m. peak hour, when traffic volumes on U.S. 101 and SR 25 would be highest.[2] Truck deliveries would be made throughout the day. Based on the above, Project construction would generate a maximum of 110 daily trips (Monday through Saturday), with 6 of those trips (3 inbound and 3 outbound) occurring during the a.m. peak hour and 33 trips (all outbound trips) occurring during the p.m. peak hour (Table 1 in Appendix K.2).

Operation

Project-generated vehicular traffic was estimated based on demand, the production capacity of the processing plant, the capacity and service rate of trucks delivering material into and out of the site, the number of employees, and the hours of operation. This trip activity represents the peak months of mining operations, which would occur during the construction season between April and October. Vehicular traffic associated with aggregate sales was assumed to access the site between the hours of 4:30 a.m. and 3:30 p.m. only. Materials delivery to the Project site would occur between 8:00 a.m. and 2:00 p.m., and maintenance vehicles are assumed to arrive and depart twice a day (between 8:00 a.m. and 9 a.m. and between 2:00 p.m. and 3:00 p.m.). Project traffic generated during the p.m. peak hour is traffic associated with employees leaving the Project site at the end of the workday.

As shown in **Table 3.13-1**, **Hourly Distribution of Project Trips**, Project operation would generate an estimated total of 324 daily vehicular trips (Monday through Saturday, except for legal holidays), including employee and customer trips. The highest number of those trips

2 Generally, traffic volumes are highest from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. during a typical weekday. The a.m. and p.m. peak hours occur during these two peak periods. The peak hour can vary from one intersection to another. For example, the peak hour at one intersection could occur between 7:00 and 8:00 a.m., while the peak hour at another intersection occurs between 7:30 and 8:30 a.m. The traffic count data show when the peak hour for a facility occurred (Appendix K.2). The peak hour is usually used to evaluate LOS on roadway facilities and at intersections. As explained above, this EIR does not evaluate Project LOS. The peak hours are instead used to inform the extent to which Project construction or operation traffic could conflict with traffic on roadways serving the Project site.

(20 inbound and 20 outbound) would occur between 8:00 a.m. and 9:00 a.m., which is within the a.m. peak period. During the p.m. peak period, 15 trips (all outbound trips) would occur between 4:00 p.m. and 5:00 p.m.

TABLE 3.13-1
HOURLY DISTRIBUTION OF PROJECT TRIPS[a]

Hours of Operation		Passenger Car	Truck			Total Site Trips		
		Facility Employees[b]	Aggregate Sales[c]	Materials Delivery	Maintenance Vehicles	In	Out	Total
4:00 a.m. to 5:00 a.m.	Arrivals	2	5			7	5	12
	Departures		5					
5:00 a.m. to 6:00 a.m.	Arrivals		10			10	10	20
	Departures		10					
6:00 a.m. to 7:00 a.m.	Arrivals	13	12			25	12	37
	Departures		12					
7:00 a.m. to 8:00 a.m.	Arrivals		12			12	12	24
	Departures		12					
8:00 a.m. to 9:00 a.m.	Arrivals		18	1	1	20	20	40
	Departures		18	1	1			
9:00 a.m. to 10:00 a.m.	Arrivals		18	1		19	19	38
	Departures		18	1				
10:00 a.m. to 11:00 a.m.	Arrivals		18	1		19	19	38
	Departures		18	1				
11:00 a.m. to 12:00 p.m.	Arrivals		18	1		19	19	38
	Departures		18	1				
12:00 p.m. to 1:00 p.m.	Arrivals		12	1		13	13	26
	Departures		12	1				
1:00 p.m. to 2:00 p.m.	Arrivals		8	1		9	9	18
	Departures		8	1				
2:00 p.m. to 3:00 p.m.	Arrivals		4		1	5	5	10
	Departures		4		1			
3:00 p.m. to 4:00 p.m.	Arrivals		4			4	4	8
	Departures		4					
4:00 p.m. to 5:00 p.m.	Arrivals					0	15	15
	Departures	15						
5:00 p.m. to 6:00 p.m.	Arrivals					0	0	0
	Departures							
Total Daily Trips:		**30**	**278**	**12**	**4**	**162**	**162**	**324**

NOTES:

a. Daily project area traffic activity was estimated based on the number of facility employees, hours of operation, and site activity information provided by the project applicant. The plant would be operated with 15 full-time employees and a total of 139 sales truck loads per day, and receive an average of six deliveries and two maintenance trucks per day.
b. Facility employees were assumed to arrive at the site within 15 minutes before and leave within 15 minutes after proposed hours of operation (7:00 a.m. to 4:30 p.m. for most employees, with 2 to 3 employees arriving at 4:30 a.m. to assist with loading early sales trucks)
c. Truck activity would occur between the hours of 4:30 a.m. and 4:00 p.m. Monday through Saturday only. The number of trucks per hour would vary as shown.

SOURCE: Freeman Associates 2021a.

TABLE 3.13-2
TRIP GENERATION FOR PROJECT CONSTRUCTION AND OPERATION DURING PEAK CONSTRUCTION ACTIVITY

	Daily Trips (inbound and outbound combined)			Trip Generation			
				A.M. Peak Hour		P.M. Peak Hour	
	Workers	Trucks[1]	ADT	in	out	in	out
Peak Construction Traffic	60	50	110	3	3	3	33
Peak Operation Traffic	30	294	324	20	20	0	15

SOURCE: Appendix K.2.

Trip Distribution and Trip Length

The estimated peak-hour Project traffic was distributed on the area transportation network based on the primary markets for the quarry materials and the locations of nearby communities from which Project workers would be drawn. Based on information provided by the Applicant, the TIA (Appendix K.1, page 65) assumed that 80 percent of the truck traffic would travel to/from Santa Clara County with an average trip length of 40 miles, while 10 percent would travel to/from San Benito County with an average trip length of 17 miles, and 10 percent would travel to Monterey County, with an average trip length of 27 miles. Employee trips were assumed to originate primarily in the Gilroy and Hollister areas, with some employees traveling to/from San Jose.

VMT Calculation

In order to calculate VMT, the ADTs for Project and truck trips were multiplied by the assumed average trip length. As shown in **Table 3.13-3**, the daily VMT per employee would be 18 miles. Total daily non-employee VMT would be 10,716 miles. It should be noted that by providing a source of aggregate near U.S. 101 and SR 25, the Project could generate fewer VMT than a similar project located in a remote area. Similarly, the Project could offset existing and/or future VMT generated by aggregate sources located farther from Santa Clara County communities. To provide a conservative analysis, this EIR did not assume these VMT reductions would occur.

3.13.4.2 Significance Criteria

Consistent with CEQA Guidelines Appendix G, the Project would result in a significant impact on 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 or be inconsistent with CEQA Guidelines Section 15064.3(b);

c) Substantially increases hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

d) Result in inadequate emergency access.

TABLE 3.13-3
VEHICLE MILES TRAVELED

Destination	% of Trips	Number of Trips (inbound and outbound combined)	Average Trip Length (miles)	Daily VMT
Heavy Truck Trips				
Santa Clara County	80	236	40	9,440
San Benito County	10	29	17	493
Monterey County	10	29	27	783
Total Truck Trips	100	294	36.45	10,716
Employees				
	100	30	18	540
Per Capita Employee VMT				**18**

NOTE: Since the 2017 TIA was prepared, the estimated number of trips associated with sales has been reduced slightly (from 300 trips per day to 278 trips per day). Therefore, total trips shown in this table and the resulting VMT calculation are slightly lower reported in the TIA (Appendix K).

SOURCE: Freeman Associates 2021b; Appendix K.1.

VMT Threshold

With respect to Significance Criterion (b), the VTA VMT estimator tool shows that the per capita daily VMT for employee trips in rural unincorporated Santa Clara County is 31.6 (WSP 2021). This per capita VMT metric is used as the baseline for evaluating the Project's employee trips. The County has selected as the threshold a 15 percent reduction below this baseline, which would be 26.9 VMT per capita. This threshold is used for both direct and cumulative analyses. As discussed in the Governor's Office of Planning and Research (OPR) Technical Advisory, "A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa." (OPR 2018)

The VMT threshold guidance in OPR's Technical Advisory was based on the California Air Resources Board 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals (OPR 2018). Consistent with that guidance, one of the thresholds for project-generated VMT is whether the project would result in a VMT per employee that is 15 percent below the baseline VMT per employee. Employee trips are only a small percentage of total Project vehicle trips; most trips would be heavy trucks used to haul aggregate to customers, as well as delivery and maintenance vehicles. There currently are no available models for analyzing truck trip VMT for projects such as the proposed Project, and no numerical threshold has been identified for heavy truck VMT. Therefore, this EIR conservatively uses as a significance threshold any increase in VMT resulting from additional truck trips.

3.13.4.3 Project Impacts

Impact 3.13-1: The Project would not conflict with County of Santa Clara policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. (Less than Significant)

This impact discussion addresses Significance Criterion (a).

As described above in Section 3.13.2.4, the County General Plan includes policies that encourage access to new quarry sites to avoid impacts on local-serving routes and encourage alternatives to truck traffic, and require that new development ensure that road safety hazards or roadway deterioration is not significant. The Project would not conflict with these or any other County policies for the reasons described below.

Transit, Bicycle, and Pedestrian Facilities. There are no dedicated pedestrian or bicycle facilities in the immediate vicinity of the Project site or along the surrounding roadways. Due to the rural nature of the vicinity of the Project site, bicycle traffic is limited. The Project is not located along an existing bus route and no bus stops exist on the roadways likely to be used during construction and operation. Therefore, the Project would have no impact on these facilities.

Construction

All Project Components

Construction traffic would travel on major thoroughfares, including U.S. 101 and SR 25, to access the Project site, consistent with General Plan Policy R-RC 78. The only rural roadway that would provide access is Old Monterey Road, which is the only direct access to the Project site. This local roadway serves a very limited area, so construction traffic would not substantially affect circulation in the area. As discussed in Chapter 2, *Project Description*, the portion of Old Monterey Road under County jurisdiction would be upgraded with additional paving and shoulders and maintained during the life of the Project, consistent with Policies R-RC 78 and R-TR 11. Project construction would not require new roadway construction or expansion of existing County roadways (beyond adding shoulders to existing Old Monterey Road), so Policy R-TR 14, requiring that the environmental effects of roadway construction and expansion be mitigated, would not apply. The impacts of providing improved access to U.S. 101 are addressed throughout this EIR. For these reasons, construction activities would not conflict with County transportation policies, and the impact would be **less than significant**.

For a discussion of temporary roadway hazards on U.S. 101 during construction, and how these are mitigated to less-than-significant levels, please see Impact 3.13-3.

Operation

Mining Pits and Processing Plant

The proposed processing plant and mining pits would be the primary generators of traffic because employees would work at both components, and deliveries and sales would occur at the processing plant. Project employees and customers would use U.S. 101 and SR 25 to access the Project site. These are both major thoroughfares that are designed to carry heavy truck traffic and are maintained by Caltrans. The portion of Old Monterey Road that is in the County would be paved and shoulders would be added, and it would be maintained during Project operation, so there would not be adverse effects on local-serving routes. In addition, the Project includes the use of trains to transport a portion of the aggregate to customers. For these reasons, Project operation would be consistent with General Plan Policy R-RC 78.

Project operation would not require new or expanded County roadways, so no new safety hazards would be created. The local County road that provides access to the Project site, Old Monterey Road, would be maintained during Project operation. For these reasons, Project operation would be consistent with Policies R-TR 9 and R-TR 11, and the impact would be **less than significant**.

Conveyor Belts and Access Roads

The conveyor belts and internal access routes would convey aggregate and Project traffic within the Project site only and would not affect local or regional roadways. Therefore, there would be **no impact**.

Rail Spur

The rail spur would provide a connection to the existing rail line, allowing for up to 28 percent of Project aggregate to be conveyed by rail rather than truck. This would support General Plan Policy R-RC-78, which encourages the use of non-vehicular transportation for aggregate. Therefore, the impact would be **less than significant**.

Reclamation

As discussed in Section 2.4.6 of the Project Description, reclamation activities would occur for approximately 5 years after completion of each phase, and up to 5 years after completion of all mining. However, reclamation activities would not occur on a daily basis over these 5-year periods. Initially, reclamation of each phase would involve grading that would be conducted by the 15 Project employees. Similarly, removal of Project facilities, such as the processing plant, would be done by those Project employees. As discussed under Mining and Processing Plant, access to the Project site for employees would not entail the construction of new roadways or expansion of existing roadways. The small number of trips by reclamation employees would not result in the deterioration of roadways, and Old Monterey Road would be maintained through the life for the Project. For these reasons, reclamation activities would be consistent with General Plan transportation policies, and the impact would be **less than significant**.

Other reclamation activities, such as hydroseeding, tree planting, and monitoring, would be done by consultants under contract to the Applicant. Hydroseeding is estimated to employ approximately two employees or contractors for four days for each phase. Tree planting would employ approximately two employees or contractors for 21 days. Monitoring would be an intermittent activity occurring over the 5-year periods and would require approximately two consultants for up to two days per year. The addition of four trips (one in and one out for each reclamation employee) would occur only sporadically and would not be substantial enough to create a hazard or result in roadway deterioration, even when added to the processing plant and mining trips. Therefore, the impact of reclamation traffic would be **less than significant**.

Summary

The Project would not affect transit or pedestrian or bicycle circulation or facilities, Access to the site would be provided via U.S. 101 and Old Monterey Road. Improvements would be designed and implemented according to Caltrans and County of Santa Clara standards for safety and emergency access; therefore, the project would not conflict with General Plan policies with regard to access and safety. The portion of Old Monterey Road that is in the County would be improved and maintained. A portion of Project aggregate would be transported by train, an alternative to truck transport. For these and other reasons described above, the Project would be consistent with General Plan transportation policies, and this impact would be **less than significant**.

Mitigation: None required.

Significance: Less than significant

Impact 3.13-2: The Project would generate substantial additional VMT. (Significant and Unavoidable)

This impact addresses Significance Criterion (b).

Construction

All Project Components

CEQA Guidelines Section 15064.3(b)(3) refers to the use of qualitative analysis of construction-related VMT. As shown in Table 3.13-2, construction of all Project components (i.e., mining pits, processing plant, conveyor belts, rail spur, access roads, and roadway improvements) would generate a maximum of 60 worker trips per day (30 inbound trips 30 outbound trips) and 50 truck trips, for a total of 110 trips. This maximum number of trips would occur only during the 2-week overlap of construction of the Monterey Road and Northbound 101 on-ramp acceleration lane improvements. For the remainder of the 6-month construction period, the Project would generate a total of 18 to 40 trips per day.

For the most part, existing traffic would continue to operate normally during Project construction. One lane on U.S. 101 could be closed for 2 to 4 days during improvement of the acceleration lane. Traffic could also be slowed at times when over-sized equipment (such as the processing plant) is brought to the Project site. The temporary closure of one lane and short periods when traffic is slowed for a short time would not result in the need to reroute traffic or detours, so the VMT for existing traffic should be unchanged.

Because the construction period would be short and would not involve large construction crews, and because existing traffic would not be rerouted to accommodate the Project, the impact related to construction VMT would be **less than significant**.

Operation and Reclamation

Employee VMT

As shown in Table 3.13-2, operation of all Project components (i.e., mining pits, processing plant, conveyor belts, rail spur, access roads, and reclamation) would generate a maximum of 30 worker trips per day (15 inbound trips and 15 outbound trips). Reclamation would periodically add another 4 trips (2 inbound and 2 outbound). As shown in Table 3.13-3, average employee trips would be approximately 18 miles long, which is below the County's per capita VMT threshold of 26.9. Therefore, employee VMT would be **less than significant**.

Truck VMT

As shown in Table 3.13-2, the majority of Project-related vehicle trips would be sales-related, essentially distribution of aggregate products to customers. As shown in Table 3.13-3, the heavy truck trips would generate approximately 10,716 VMT daily.

As discussed above, Section 15064.3 of the CEQA Guidelines does not address heavy truck trips, and there is no other established threshold for evaluating VMT impacts from heavy truck trips for projects such as the proposed Project. However, given that very few trips originate from the Project site at present, and that the Project would increase VMT on regional roadways, the increase in truck-based VMT from the Project is considered a **significant impact**.

The Project provides for transport of some aggregate by rail. Up to 28 percent of aggregate exported from the Project site would be transported by rail. If the Project did not include this rail component, the Project VMT would be substantially higher. In addition, by providing an additional source of aggregate in south Santa Clara County, the Project could offset haul-truck related VMT in the County for those customers that would otherwise obtain aggregate from sources located farther away; however, to provide a conservative analysis this EIR did not assume such VMT reductions.

Summary

Daily employee VMT would be 18 miles per capita, which is well below the threshold of 26.9 VMT per capita. For heavy truck traffic, any increase is considered significant, and the Project would generate 10,716 VMT daily. Therefore, the increase in VMT is considered a **significant impact**.

> **Mitigation Measures:** None available.
>
> The Project VMT is driven largely by the location of the Project site and the dispersed nature of deliveries. The Project site is located in a rural area because that is where the aggregate is located. In addition, it is typical to locate such facilities in rural areas due to the potential incompatibility with denser residential and commercial uses located in more urban settings due to noise, heavy truck traffic on local roads, and the industrial nature of aggregate processing. Most of the Project VMT would be generated by new on-road truck trips (for delivery of materials to the Project and delivery of aggregate to customers). The Project already includes delivery of aggregate by rail up to 3 times per week. No additional feasible transportation options are available to replace or reduce these haul

truck trips. Therefore, no feasible mitigation is available to reduce the significant impact of truck-based VMT.

Significance: Significant and Unavoidable

Impact 3.13-3: Project construction could increase roadway hazards due to the presence of large construction trucks, temporary lane closures, and detours. (Less than Significant with Mitigation Incorporated)

This impact discussion addresses Significance Criterion (c).

Construction

All Project Components

The primary impacts from the movement of construction trucks would include short-term and intermittent lessening of roadway capacities due to slower movements and larger turning radii of the trucks compared to passenger vehicles. In addition, drivers could experience delays if they were traveling behind a construction truck. Furthermore, Project construction activities would include improvements to public roadways (U.S. 101 on-ramp east of Sargent Ranch and Old Monterey Road) to facilitate truck access, as described in detail in Section 2.4 of the Project Description. According to the Applicant, the only lane closure on U.S. 101 would occur during the proposed improvements to the northbound U.S. 101 acceleration lane at the north/south roadway (Old Monterey Road Extension) on-ramp, just north of Tar Creek. The right lane could be closed for 2 to 4 days (Freeman Associates 2021c). During this time period, the northbound U.S. 101 shoulder lane at the on-ramp would be closed for protection of the construction crew with the use of cones, arrow board, and the appropriate advance warning signs as required by Caltrans (Freeman Associates 2021c).

Additionally, transportation of some of the plant equipment may require oversize load vehicles. This equipment would be transported to the site following Caltrans and California Highway Patrol guidelines and standards, including flagging, signage, and pilot cars (Freeman Associates 2021c). Oversize load vehicles on state roadways require a transportation permit issued by Caltrans.

As with any work that encroaches onto the state right-of-way, the Project would be required to obtain an encroachment permit issued by Caltrans for the northbound on-ramp improvements. Temporary traffic controls, such as road closure signs, would have to comply with the Traffic Control Manual. In addition, if Caltrans determines that traffic restrictions due to Project construction or proposed improvements may affect state highways, a Transportation Management Plan (TMP) may be required to be submitted to and approved by Caltrans prior to the initiation of construction. At this time, it is not known if a TMP would be required by Caltrans, or what the contents of the TMP strategies would be.

Lane closures and/or detours could introduce new or changed travel patterns, which, along with the movement of oversized vehicles, could temporarily result in new or increased roadway hazards. Therefore, construction traffic impacts would be **significant**.

Operation and Reclamation

Mining Pits, Conveyor Belt, Processing Plant, Rail Spur, Access Road and Reclamation

These Project components would be located entirely on-site and therefore would not create any hazards on public roadways or conflict with traffic on public roads. There would be **no impact**.

Roadway Improvements

Existing roadways (U.S. 101 and Old Monterey Road) would be used to access the Project site. The existing acceleration lane on the northbound U.S. 101 on-ramp and public right-of-way portions of Old Monterey Road would be improved to Caltrans and County of Santa Clara engineering standards. The northbound acceleration lane would be 12 feet wide and 0.25 mile long, which would provide adequate line of sight (and correct an existing line of sight deficiency) and acceleration distance (Appendix K.1, pp. 7 and 8). No sharp curves or dangerous roadway conditions are proposed in public or private portions of the Project site and adherence to engineering standards would ensure the roadways meet a minimum standard of safety. The estimated 324 daily trips associated with the Project would be spread out through the course of the day and would not result in vehicle queues on the U.S. 101 off-ramps leading to the Project site that could not be accommodated by existing storage capacity (Appendix K.1, p. 41). For these reasons, Project roadway improvements would not create safety hazards, and the impact would be **less than significant**.

Summary

Project operation and reclamation would not create or contribute to safety hazards on roadways used to access the Project site. However, construction activities on the U.S. 101 northbound ramp could create temporary safety hazards, which would be a **significant impact**.

Mitigation Measure 3.13-3: Construction Traffic Control Plan

The Applicant shall require the construction contractor to prepare and submit a Construction Traffic Control Plan to the County of Santa Clara Department of Public Works and Caltrans District 4 for approval prior to the onset of construction. The Construction Traffic Control Plan shall be prepared in accordance with the California Department of Transportation Transportation Management Plan Guidelines (2015) and shall include, at a minimum, the following:

a. Restricting or limiting heavy vehicle traffic to and from the Project site to occur outside the peak commute hours (7:00-9:00 a.m. and 4:00-6:00 p.m.);

b. Timing of deliveries of heavy equipment and building materials to occur outside the peak commute hours;

c. Directing construction traffic with a flag person;

d. Placing temporary signage, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;

e. Ensuring access for emergency vehicles to the Project site;

f. Temporarily closing travel lanes or delaying traffic during materials delivery or the construction of roadway improvements;

g. Storing construction equipment on-site during construction;

h. Identifying and using truck routes acceptable to Caltrans and the County for construction-related heavy trucks;

i. Maintaining access to any adjacent properties; and,

j. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the a.m. and p.m. peak hours.

Significance after Mitigation: Less than significant

The implementation of **Mitigation Measure 3.13-3** would minimize motorist delay and would ensure that motorists can travel safely through Project work zones, thereby reducing this impact to a less-than-significant level.

Impact 3.13-4: The Project could result in inadequate emergency access. (Less than Significant with Mitigation Incorporated)

Construction

All Project Components

As discussed in Impact 3.13-3, Project construction could require temporary lane closures, which could affect the movement of emergency vehicles. This would be a **significant impact**.

Operation and Reclamation

Mining Pits, Conveyor Belt, Processing Plant, Rail Spur, and Reclamation

These Project components would be located entirely would not affect emergency vehicle circulation on public roads. Emergency vehicles could use on-site access roads to move around the Project site, if necessary. Therefore, the impact would be **less than significant**.

Roadway Improvements

The Project site is located in an undeveloped rural area of Santa Clara County with the primary access roads (Old Monterey Road, Old Monterey Road Extension) allowing adequate emergency egress and ingress to the site. Therefore, the development of the Project would not physically interfere with emergency vehicle access or personnel evacuation from the site.

As described above, increased Project-related traffic would not cause a significant increase in congestion and/or significantly worsen the existing operating conditions on area roads; therefore, Project-related traffic would not affect emergency access to the Project site or any other surrounding location. The Project would not require closures of public roads, which could inhibit access by emergency vehicles. For these reasons, construction and operation of roadway improvements would have a **less-than-significant impact** on emergency access.

Summary

Construction activities could temporarily impede the movement of emergency vehicles when work is being conducted on U.S. 101 and/or Old Monterey Road, which would be a **significant impact**. Once construction on these roadways is complete, the Project would no longer interfere with or adversely affect emergency vehicles, so the operational and reclamation impacts would be **less than significant**.

> **Mitigation Measure 3.13-4:** Implement Mitigation Measure 3.13-3, Construction Traffic Control Plan.
>
> **Significance after Mitigation:** Less than significant
>
> The implementation of **Mitigation Measure 3.13-3** requires that the Construction Traffic Control Plan include provisions to maintain emergency access, which would ensure that emergency vehicles could travel through U.S. 101 and Monterey Road during Project construction, thereby reducing this impact to less-than-significant levels.

3.13.4.4 Cumulative Analysis

The analysis of consistency with applicable transportation plans and policies (Impact 3.13-1) is project-specific, because it is not affected by other projects in the region. Therefore, there would not be a cumulative impact regarding policy and plan consistency.

Impact 3.13-5: The Project would contribute to cumulative increases in vehicle miles traveled. (Significant and Unavoidable)

The region, like much of the state, already experiences significant VMT. Although the state has enacted laws aimed at encouraging transit-oriented and infill land use planning and development, other growth will continue to occur in suburban and rural areas, such as unincorporated Santa Clara County, that require relatively lengthy trips due to the distance between residential development and employment centers. While there are a variety of measures available to residential and commercial development to reduce VMT, such as mixed-use land use patterns and transit programs, these approaches are not typically available for industrial projects, particularly those such as aggregate mining and processing that must be located in rural areas. Because the extent to which future projects will be able to achieve VMT reductions is unknown at this time, cumulative VMT impacts are assumed to be significant.

As discussed above, the increase in VMT associated with Project employees would be below the County's threshold. However, heavy trucks transporting aggregate from the Project site to customers, and materials from vendors to the Project site would generate 10,716 daily VMT. To the extent that Project trips displace aggregate deliveries from other sources at greater distances, the net increase in Project VMT may be lower than 10,716.,although the EIR does not assume this. However, the Project would generate new trips so there would be an increase in VMT, which could inhibit the County and the state from achieving reductions in regional and statewide VMT. The Project would contribute to a significant cumulative VMT impact, and its contribution would be cumulatively considerable pre-mitigation. No feasible mitigation is available to reduce the VMT impacts of the Project to less-than-cumulatively considerable. This impact would therefore be **significant and unavoidable**.

Mitigation Measure: None available.

As discussed in Impact 3.13-2, no transportation options are available to replace or reduce haul truck trips. Therefore, no feasible mitigation is available to reduce the significant impact of truck-based VMT.

Significance after Mitigation: Significant and Unavoidable

Impact 3.13-6: The Project would contribute to significant cumulative increases in roadway hazards and/or interference with emergency access. (Less than Significant with Mitigation Incorporated)

For purposes of the analysis, the geographic scope for cumulative impacts on roadway safety and emergency access is focused on projects located within six miles of the Project that are currently under construction, planned, or approved, because projects within 6 miles of the Project are the only ones likely to contribute traffic to the study area roadways, if constructed or operated concurrently. Of the five cumulative projects identified in Table 3.1-1 located within 6 miles of the Project site, three are minor zoning, modification, or redevelopment actions that would not contribute substantial traffic to regional roadways that would be used by Project traffic. Two cumulative projects, the U.S. 101 Widening and the Christopher Ranch Farm Worker Housing Project, would use the same roads as Project construction and operation traffic.

U.S. 101 Widening Project

The U.S. 101 Widening project, identified as VTP ID #H25 in the VTP 2040, would expand U.S. 101 from four to six lanes between Gilroy and SR 129 in San Benito County; reconstruct the U.S. 101/SR 25 interchange, extend Santa Teresa Boulevard from Castro Valley Road to the U.S. 101/SR 25 interchange; improve the southbound U.S. 101 off-ramp at SR 129, grade-separate the Union Pacific Rail crossing on SR 25 west of Bloomfield Avenue, and construct new bicycle facilities.

Phase I of the project, which includes widening of the SR 25 bridge over U.S. 101, extending the length of the southbound U.S. 101 off-ramp to SR 25, upgrades to the northbound U.S. 101 ramps at SR 25 to improve exit and merging operations, and new traffic signals at the ramp intersections, is fully funded with construction currently anticipated to occur between 2023 and 2025. As additional funding becomes available, future phases of interchange improvements would be scheduled. (VTA 2020).

Future phases of the U.S. 101 Widening Project also would include the construction or improvement of various frontage roads along both side of U.S. 101, including Old Monterey Road, and the elimination of uncontrolled local and private access to/from U.S. 101, including the existing U.S. 101 southbound ramps at Old Monterey Road.

Christopher Ranch Farm Worker Housing Project - Gilroy

This project, identified by the County of Santa Clara as PLN19-0215, would construct housing to accommodate agricultural workers near Gilroy, approximately 4 miles north of the Project site. The Christopher Ranch project would renovate six existing buildings to provide housing for 160 to 200 seasonal skilled agricultural workers in 38 units. The project would provide transportation for workers, so only 11 standard parking spaces and five bus spaces would be provided (Christopher Ranch, LLC 2020).

The status and estimated schedule for the Christopher Ranch project are currently unknown, so it is assumed that traffic generated by construction and operation of this agricultural housing project could overlap with construction and/or operation of the Project and would use some of the same roadways that would be used by vehicles traveling to/from the Project site, namely U.S. 101 and SR 25.

This Christopher Ranch project does not propose any improvements along U.S. 101 or SR 25, so it is unlikely to require road closures or detours, or otherwise result in increased hazards and/or deterioration of roadway conditions on U.S. 101 and SR 25.

Summary

Both construction and operational traffic from the U.S. Widening Project and the Christopher Ranch housing project would use roads that would also be used by the Sargent Quarry project. The U.S. 101 Widening Project construction would occur within U.S. 101 and SR 25, which could require lane closures, detours and other disruptions, resulting in deteriorating conditions and/or safety hazards on these roadways. If closures, delays and/or detours do occur, emergency access in the region could be adversely affected. The Phase I improvements of the U.S. 101 Widening Project are mainly intended to improve connectivity, traffic operations, and safety conditions at the U.S. 101/SR 25 interchange; such improvements would not generate new vehicle trips on study area roadways and would improve traffic conditions once construction is complete. The Christopher Ranch housing project would not require construction on U.S. 101 or SR 25, but construction traffic could use these roadways. After it is constructed, vehicle trips associated with the housing project would be too minimal to affect roadway hazardous conditions, because project traffic would be limited. For these reasons, cumulative impacts related to roadway hazards and emergency access would be significant, but this impact would be temporary, occurring only during construction of each project.

Project Contribution

As discussed in Impacts 3.13-3 and 3.13-4, Project construction activities could result in roadway hazards and interference with emergency access due to lane closures and transport of oversized loads. If these activities occurred during construction of the U.S. 101 Widening project and/or the Christopher Ranch housing project, the potential for hazards and interference with emergency vehicles would be increased. This would be a considerable contribution to the temporary risk of roadway hazards and interference with emergency vehicles, so the Project's contribution to the cumulative roadway hazards and emergency access impact during construction would be cumulatively considerable, and therefore **significant**.

Project construction would be complete within nine months. After completion of construction, the Project would no longer contribute to cumulative risks of roadway hazards or emergency access, because the Project would not require lane closures or transport of oversized equipment. Further, operational Project traffic would not alter roadway conditions to the extent that hazardous conditions would be created and/or that would interfere with emergency vehicles. Further, as shown in Table 3.13-4, Existing with Project Operation Traffic Volumes, after construction the Project would contribute very little traffic to those regional transportation facilities (i.e., no more than 1.1 percent of overall traffic). The TIA (Appendix K.1) concluded that the Project trips that would be rerouted as a result of the removal of the U.S. 101 southbound ramps at Old Monterey Road and that the connection of Old Monterey Road with the newly constructed U.S. 101/SR 25 interchange would ensure that any queues at the newly constructed ramps could accommodated by future planned storage capacity.

Mitigation Measure 3.13-6: Implement Mitigation Measure 3.13-3, Construction Traffic Control Plan.

Significance after Mitigation: Less than significant

Mitigation Measure 3.13-3 requires that the Construction Traffic Control Plan include provisions to ensure that motorists can travel safely through Project work zones and to maintain emergency access, which would ensure that roadway hazards would be minimized, and emergency vehicles could travel through U.S. 101 and Old Monterey Road during Project construction, thereby reducing the Project contribution to this cumulative impact to a less-than-cumulatively considerable and less-than-significant level.

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3.14 Utilities and Service Systems

3.14.1 Introduction

Project impacts on utilities and service systems, specifically water supply and solid waste disposal, are discussed in this section. Because the project would use an on-site septic system rather than connecting to a sewer system, there would be no impact on municipal wastewater treatment infrastructure, and this topic is not discussed further. Similarly, the Project site is not connected to municipal or County storm drains, so this issue is not addressed in this section. Impacts due to installation of a new groundwater well and reconfiguring onsite drainages and related issues are addressed in Section 3.10, *Hydrology and Water Quality*. Analysis of energy utilities and service systems (e.g., gas, electricity) is provided in Section 3.6, *Energy*.

3.14.2 Regulatory Setting

3.14.2.1 Federal

Federal Safe Drinking Water Act

The U.S. Environmental Protection Agency (USEPA) administers the Safe Drinking Water Act (SDWA), the primary federal law that regulates the quality of drinking water and establishes standards to protect public health and safety. The State Water Resources Control Board (SWRCB) implements the SDWA and oversees public water system quality statewide. SWRCB establishes legal drinking water standards for contaminants that could threaten public health.

3.14.2.2 State

California Urban Water Management Planning Act – Water Supply Planning

The 1983 California Urban Water Management Planning Act (Water Code Section 10610-10656, as amended) requires every urban water supplier to prepare and adopt an Urban Water Management Plan (UWMP) and update it every five years. The UWMP must describe demographic factors affecting water management planning (such as projected population changes), describe and quantify (if possible) existing and planned sources of water available to the supplier in five-year increments to 20 years or as far as data are available, and describe the reliability and vulnerability of the water supply. The UWMP must include all water supply projects and programs that may be undertaken by the urban water supplier to meet the total projected water demand. The Santa Clara Valley Water District (now known as Valley Water), an independent special district that serves all of Santa Clara County including the Project area, meets the definition of an urban water supplier, and its most recent UWMP is described below in Section 3.14.2.3.

Senate Bill 610 - Water Supply Assessments

Senate Bill 610, codified in California Water Code section 10910 et seq., requires preparation of a water supply assessment for projects as defined in Water Code section 10912. Proposed industrial, manufacturing, processing plants, or industrial parks planned to house more than 1,000 persons, occupy more than 40 acres of land, or having more than 650,000 square feet of floor area are required to prepare a water supply assessment pursuant to this code. If a water supply for a proposed project includes groundwater, the water supply assessment must include a review of any information contained in the urban water management plan relevant to the identified water supply for the project, a description of any groundwater basin or basins from which the project would be supplied, information about whether the basin is overdrafted, and an analysis of the sufficiency of the groundwater basin or basins to meet the projected water demand associated with the project, among other information. The water supply assessment must also include discussion of how supply will meet demand during normal, single dry, and multiple dry years during a 20-year projection. A water supply assessment has been prepared for this Project and is discussed in Section 3.14.4.3, *Project Impacts*; see Appendix I.3.

California Safe Drinking Water Quality Act

The California Safe Drinking Water Act strengthens the federal Safe Drinking Water Act by authorizing the State to protect the public from contaminants in drinking water by establishing maximum contaminants levels (MCLs) that are at least as stringent as those developed by the USEPA.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (Public Resources Code Section 40000-49620) established the Integrated Waste Management Board (now known as CalRecycle), required the implementation of integrated waste management plans, and mandated that local jurisdictions divert at least 75 percent of solid waste generated (from 1990 levels) by 2010. Local jurisdictions each have a per resident and per employee disposal rate target, expressed in pounds per person per day (PPD). For unincorporated Santa Clara County, these targets are four PPD and 13.1 PPD, respectively (CalRecycle 2021a). Santa Clara County's Integrated Waste Management Plan is described below in Section 3.14.2.3.

Assembly Bill 341

AB 341 set forth requirements of the statewide mandatory commercial recycling program in the Public Resources Code that are applicable to the Project's operations. Businesses that generate four or more cubic yards of garbage per week are required to recycle (Public Resources Code Section 42649-42649.7).[1]

Surface Mining and Reclamation Act (SMARA)

SMARA regulations require the preparation of a detailed reclamation plan, which must follow the following standards related to waste management:

- All buildings, structures, and equipment shall be dismantled and removed prior to final mine closure except those buildings, structures, and equipment approved in the reclamation plan as necessary for the end use.

1 "Businesses" are defined in this code as any commercial or public entity, including but not limited to a firm, partnership, proprietorship, joint-stock company, corporation, or association that is organized as a for-profit or non-profit entity. "Commercial solid waste" includes all types of waste generated by such a business.

- All equipment, supplies, and other materials shall be stored in designated areas (as shown in the approved reclamation plan). All waste shall be disposed of in accordance with state and local health and safety ordinances.

3.14.2.3 Local

Santa Clara County General Plan

The following Santa Clara County General Plan policies regarding water supply and solid waste management would apply to the project:

> ***Policy C-RC 8:*** Environmental impacts of all state and local water supply planning and decision-making should be taken into full consideration.
>
> ***Policy C-RC 12:*** More efficient use of water for agricultural irrigation and industrial processes should be promoted through improved technology and practices.
>
> ***Policy C-RC 64*****:** Countywide solid waste management efforts shall be guided by the hierarchy of strategies outlined below, emphasizing resource recovery in accordance with state law: a. Source reduction and reuse, b. Recycling and composting, c. Transformation, and d. Landfilling as final option.
>
> ***Policy C-RC 65:*** All solid waste management services and facilities shall conform to applicable federal, state, and local regulations and standards.

County Garbage and Refuse Ordinances

Section B11-160 et seq. of the County Ordinance Code requires that all refuse generated from the unincorporated area be delivered to or disposed at a properly permitted disposal facility, transfer station, or other facility authorized by the County. No person may produce or store refuse of any kind in a manner that would represent a threat to the public or environmental health. In remote areas where curbside or collection station garbage service cannot be provided, the refuse producer may transport their own garbage to an approved solid waste facility with a frequency and mode of transport to preclude any nuisance conditions. It is unlawful for any person to throw away, deposit or bury, or cause to be thrown away, deposited or buried, any refuse, except at an approved disposal or collection area unless authorized by the County.

County of Santa Clara Integrated Waste Management Plan

The County of Santa Clara Integrated Waste Management Plan (1995) sets the overall waste diversion goals of the County and describes the programs to be implemented by each jurisdiction in the County to achieve these goals. The programs address source reduction, recycling, composting, special wastes, and public education. Programs and policies relevant to the Project include encouraging landfills and transfer stations to implement variable pricing that incentivizes waste stream separation (e.g., charging less to dispose of clean landscaping waste that can be composted). There are no Project-specific requirements in this plan, but the landfills and transfer stations that would handle Project-generated solid wastes would be subject to requirements in this plan.

Valley Water Urban Water Management Plan

The Valley Water 2020 Urban Water Management Plan (Valley Water 2021a) provides information on water supply, water usage, recycled water, conservation programs, water shortage contingency planning, and water supply reliability in Santa Clara County and addresses the water supply future of the County through 2045. As part of the UWMP, Valley Water has developed a water shortage contingency plan to manage water supplies and demands during water shortages due to droughts and other emergencies. Valley Water also promotes water conservation through a range of demand management measures such as metering, public education and outreach, and rebates for residential and commercial users. (Valley Water 2021)

Water Shortage Contingency Plan

Valley Water prepared the Water Shortage Contingency Plan (WSCP) to identify specific conditions that would trigger the need for reductions in demand due to drought conditions or an emergency that affects water supply (Valley Water 2021b). The WSCP identifies five stages and associated recommended short-term reductions in water use. For example, Stage 2, Alert, would occur if projected end-of-year groundwater storage drops to 250,000 to 300,000 acre feet, and would require reductions in water use of zero to 10 percent, while Stage 4, Critical, would occur if projected end-of-year groundwater storage dropped to 150,000 to 200,000 acre feet, requiring 20 to 40 percent reductions in water use. As a water wholesaler, Valley Water does not have direct authority over retail rates and does not employ staff to enforce water restrictions. Therefore, Valley Water coordinates with the County, cities, water retailers, large landscapers and agricultural uses to implement applicable ordinances and water use restrictions.

3.14.3 Environmental Setting

3.14.3.1 Water Supply

Water service to the Project site is currently provided by an existing private well, as neither the County nor nearby cities have water services extending to the Project area. The well draws from the Llagas groundwater subbasin, managed by Valley Water, and is located just south of the proposed Project well that would be located adjacent to the processing plant. The next closest wells are east of U.S. 101 along the south bank of Tar Creek; Valley Water operates a monitoring well and Sun and Sons LP operates an irrigation well.

The Llagas subbasin, part of the larger Gilroy-Hollister Valley Groundwater Basin, covers a surface area of about 88 square miles bounded by the Santa Cruz Mountains to the west and the Diablo Range to the east. The subbasin’s southern boundary is based on the boundary between Santa Clara and San Benito counties rather than on groundwater conditions. Groundwater upwells in the southwestern corner of the Llagas subbasin, supporting wetland vegetation adjacent to a perennial reach of the Pajaro River. Groundwater upwelling in this area likely flows into the Pajaro River, which then flows west through the Santa Cruz Mountains to Monterey Bay.

Groundwater is the primary source of water supply for the Llagas subbasin. Regional groundwater pumping in the Llagas subbasin averaged 41,400 AFY between 2015 and 2019. During 2019, groundwater storage in Llagas subbasin increased by 6,900 AF (Valley Water 2020).

About half of the County's water supply comes from local sources and about half comes from imported water sources. Imported water includes State Water Project and Central Valley Project contract supplies and supplies delivered by the San Francisco Public Utilities Commission (Valley Water 2021a). **Table 3.14-1** summarizes projected future water demand for the County and for the Llagas groundwater subbasin. While agricultural pumping, 85 percent of which occurs in the Llagas subbasin, is likely to remain stable through 2040, municipal use is projected to increase by almost 4 percent from 2025 to 2045. To meet projected increases in municipal use, Llagas subbasin withdrawal is projected to increase by 8 percent, or 6,000 acre-feet per year, from 2025 to 2040 (Appendix I.3).

TABLE 3.14-1
PROJECTED WATER DEMAND, SANTA CLARA COUNTY AND LLAGAS GROUNDWATER SUBBASIN

Sector	2025	2030	2035	2040	2045
Countywide					
Municipal Retailers	288,000	280,000	285,000	290,000	299,000
Agricultural Groundwater Pumping	25,000	25,000	25,000	25,000	25,000
Independent Groundwater Pumping	14,000	14,000	14,000	14,000	14,000
Raw Water	2,000	2,000	2,000	2,000	2,000
Losses	3,000	3,000	3,000	3,000	3,000
Countywide Demand Total	332,000	324,000	329,000	334,000	343,000
Llagas Subbasin					
Llagas Groundwater Demand Total	49,000	52,000	53,000	53,000	n/a

SOURCE: Valley Water 2021a, 2016.

In the 2020 UWMP, water supply estimates are provided for future single dry years and multiple dry year periods on a county wide basis. **Table 3.14-2** shows the anticipated sources of water supply during a normal year. **Table 3.14-3** shows the reductions in supply that are projected to occur during single-dry and multiple-dry year periods and compares projected supply and demand. The reductions in supply are mainly reductions in imported water (Appendix I.3). As shown in Table 3.14-3, supply is projected to exceed demand in every period. During the single-dry year period, supply is estimated to be 80 percent of normal supply.

It should be noted that the imported water is used to meet supply in the Santa Clara Plain and is not expected to affect the supply in Llagas subbasin, which relies on groundwater and some recycled water. As experienced in the most recent drought, demands will likely be reduced further with water conservation. (Appendix I.3)

Valley Water is evaluating supply projects and programs to increase water supply with a goal of requiring conservation reductions no more than 10 percent. Additional projects and programs may include additional long-term water conservation savings, water recycling, recharge capacity, storm water capture and reuse, banking, and storage (Valley Water 2021a, 2021b).

TABLE 3.14-2
PROJECTED SOURCES OF WATER SUPPLY, SANTA CLARA COUNTY AND LLAGAS GROUNDWATER SUBBASIN

Sector	2025	2030	2035	2040	2045
Countywide Normal Year Supply					
Groundwater	140,000	164,000	163,000	162,000	162,000
Local Surface Water	30,000	70,000	185,000	185,000	185,000
Recycled Water	16,000	19,000	22,000	26,000	28,000
Potable Reuse	-	-	-	-	-
San Francisco Public Utilities Commission	55,000	26,000	59,000	61,000	63,000
Central Valley Project and State Water Project Allocations	130,000	134,000	136,000	139,000	142,000
Countywide Normal Year Supply Total	446,000	518,000	640,000	643,000	650,000
Llagas Subbasin					
Llagas Groundwater Supply Total	49,000	52,000	53,000	53,000	n/a

SOURCE: Valley Water 2021a, 2016.

TABLE 3.14-3
COMPARISON OF PROJECTED COUNTYWIDE SUPPLY AND DEMAND UNDER NORMAL YEAR, SINGLE DRY YEAR, AND MULTIPLE DRY YEAR CONDITIONS

	2025	2030	2035	2040	2045
Normal Year					
Available Supply (AFY)	446,000	518,000	640,000	643,000	650,000
Projected Demand (AFY)	330,000	325,000	330,000	335,000	345,000
Difference (AFY)	116,000	193,000	310,000	308,000	305,000
Single Dry Year					
Available Supply (AFY)	355,000	373,000	497,000	503,000	505,000
Projected Demand (AFY)	330,000	325,000	330,000	335,000	345,000
Difference (AFY)	25,000	48,000	167,000	168,000	160,000
Single Dry Year Supply as % of Normal Year Supply	80%	72%	78%	78%	78%
Multiple Dry Year					
First Year					
Available Supply (AFY)	345,000	349,000	491,000	483,000	487,000
Projected Demand (AFY)	330,000	325,000	330,000	335,000	345,000
Difference (AFY)	15,000	24,000	161,000	148,000	142,000
First Dry Year Supply as % of Normal Year Supply	77%	67%	77%	75%	75%
Second Year					
Available Supply (AFY)	370,000	376,000	477,000	482,000	501,000
Projected Demand (AFY)	330,000	325,000	330,000	335,000	345,000
Difference (AFY)	40,000	51,000	147,000	147,000	156,000
Second Dry Year Supply as % of Normal Year Supply	83%	73%	75%	75%	77%

TABLE 3.14-3 (CONTINUED)
COMPARISON OF PROJECTED COUNTYWIDE SUPPLY AND DEMAND UNDER NORMAL YEAR, SINGLE DRY YEAR, AND MULTIPLE DRY YEAR CONDITIONS

	2025	2030	2035	2040	2045
Multiple Dry Year (cont.)					
Third Year					
Available Supply (AFY)	340,000	349,000	443,000	450,000	448,000
Projected Demand (AFY)	330,000	325,000	330,000	335,000	345,000
Difference (AFY)	10,000	24,000	113,000	115,000	103,000
Third Dry Year Supply as % of Normal Year Supply	76%	67%	69%	70%	69%
Fourth Year					
Available Supply (AFY)	347,000	341,000	416,000	421,000	429,000
Projected Demand (AFY)	330,000	325,000	330,000	335,000	345,000
Difference (AFY)	17,000	16,000	86,000	86,000	84,000
Fourth Dry Year Supply as % of Normal Year Supply	78%	66%	65%	65%	65%
Fifth Year					
Available Supply (AFY)	341,000	365,000	430,000	440,000	444,000
Projected Demand (AFY)	330,000	325,000	330,000	335,000	345,000
Difference (AFY)	11,000	40,000	100,000	105,000	99,000
Fifth Dry Year Supply as % of Normal Year Supply	76%	70%	67%	68%	68%

SOURCE: Valley Water 2021a, Tables 7-2, 7-3, and 7-4.

3.14.3.2 Solid Waste Disposal

Solid waste generated in unincorporated areas of Santa Clara County is sent to several different landfills. In 2019, unincorporated Santa Clara County generated just over 100,000 tons of waste, with 97 percent of it going to six specific landfills: John Smith Road landfill (56,142 tons), Kirby Canyon landfill (10,129 tons), Billy Wright Disposal Site (9,895 tons), Newby Island Sanitary landfill (8,422 tons), Monterey Peninsula Landfill (7,995 tons), and Guadalupe Sanitary Landfill (7,114 tons) (CalRecycle 2020). Of these, Kirby Canyon Landfill is most conveniently located to the Project site, at 25 miles north on U.S. 101. Kirby Canyon Landfill had a remaining capacity of approximately 16 million cubic yards in 2015 and a maximum permitted throughput of 2,600 tons per day. Based on current tonnage rates, it will remain open until 2059 (CalRecycle 2021b). Additionally, Buena Vista Landfill, located in Santa Cruz County, is located 21 miles west of the Project site via SR 129 and has a remaining capacity of 2 million cubic yards and a maximum permitted throughput of 838 tons per day, and is estimated to close in 2031 (CalRecycle 2021c).

Reporting year 2015 is the most recent approved local jurisdiction report for the County's Integrated Waste Management Plan, and results indicate that the county generated less waste per resident (3.0 PPD) and per employee (9.9 PPD) than the County-specific target disposal rates (4 and 13.1 PPD, respectively). The 2015 total adjusted reporting-year disposal amount for unincorporated Santa Clara County was 48,395 tons (CalRecycle 2016).

3.14.4 Impact Evaluation

3.14.4.1 Approach to the Analysis

The section evaluates whether the Project would necessitate relocation or construction of new or expanded utility facilities such that significant environmental effects could result by reviewing available information about utilities serving the Project area and assessing whether impacts associated with relocation or construction of utilities would result in additional effects beyond those identified for the Project. This section also analyzes the potential for Project implementation to adversely affect water supply, attainment of solid waste reduction goals, and compliance with solid waste statutes and regulations. For water supply, the analysis relies on the water supply assessment (WSA) prepared for the Project to characterize whether supplies are sufficient to meet the water demand associated with Project operations. For attainment of solid waste reduction goals and compliance with statutes and regulations, the analysis considers whether Project construction, operation or reclamation would conflict with adopted goals, statutes, and regulations.

3.14.4.2 Significance Criteria

The Project would result in a significant impact on 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 has 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; or

e) Not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Analysis of energy utilities and service systems (e.g., gas, electricity) is provided in Section 3.6, *Energy*, of this Draft EIR.

Due to the nature of the Project, the following criteria are not analyzed in this section for the reasons described below:

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***. As discussed in Section 3.14.1, *Introduction*, the Project would not connect to a municipal sewer or storm drain system, so these facilities would not need to be expanded to serve the Project. Telecommunication lines already serve the Project site (the ranch house), so would require only a minor extension if the Project elects to have a land line at the processing site. For these reasons, the Project would have **no impact** due to the relocation or construction of these new or expanded utilities. Electrical and natural gas facilities are discussed in Section 3.6, *Energy*. The environmental impacts of installing additional groundwater wells are discussed in Section 3.10, *Hydrology and Water Quality*.

c) ***Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments***. The Project would not be served by a municipal wastewater treatment provider. The Project includes installation of an on-site septic system to treat wastewater from facility restrooms. No industrial wastewater would be generated that would require treatment by a wastewater treatment provider. Water used during aggregate processing would be collected and reused. Therefore, the Project would have **no impact** on wastewater treatment.

3.14.4.3 Project Impacts

Impact 3.14-1: The Project would increase demand for water supply. (Less than Significant)

This impact addresses Significance Criterion (b).

Construction

Water use during construction would be intermittent and temporary. The primary use of water during construction would be for dust control in areas that are exposed during initial site grading. The source of this water would be the existing onsite well, which would be supplemented by a new on-site well once it is completed. After construction of each Project component is complete, construction-related dust control would no longer be necessary; however, as described below, groundwater would continue to be used for dust suppression during operation. Potable water would be hauled to the Project site for consumptive use by workers. As discussed in more detail below, according to the Water Supply Assessment (Appendix I), adequate water supply is available to meet Project demand during construction, and the impact would be **less than significant**.

Operation and Reclamation

Mining Pits, Access Roads, and Processing Plant

Project operation and reclamation activities would consume up to a total of 85,800 gallons per day, or approximately 82 acre-feet per year, at peak production (see Table 2-5 in Chapter 2, Project Description). Most of the water would be used for aggregate processing. Dust suppression would be the next highest demand for water. A new private well would supply the Project's water needs. During operation, approximately 80 percent of the water used in aggregate processing would be reused as part of plant operations. No groundwater would be used for human consumption; drinking water would be brought to the facility by private vendors.

According to the Water Supply Assessment (Appendix I), adequate water supply is available to meet Project demand. Groundwater to supply the Project would be pumped from the Llagas subbasin, described in Section 3.14.3.1. While the additional groundwater demand from the

Project would increase the groundwater outflows from the Llagas subbasin, sufficient water supplies would be available to serve the Project and current and future water demands during normal, dry, and multiple dry years (Appendix I.3). Total Project water demand, while not specifically accounted for within Valley UWMP, would be within the municipal and industrial demand growth projections of 11,000 acre-feet per year shown in Table 3.14-1 (listed in Table 3.14-1 as "municipal retailers"). The Project's demand would account for less than 1 percent of the increase in municipal and industrial demand growth. Furthermore, groundwater production in the Llagas subbasin has historically remained stable and fulfilled water demand during both single and multiple dry year periods (Appendix I.3). Because the Project's water demand would comprise a small fraction of future water demand that has been accounted for in Valley Water's UWMP, sufficient water supplies would be available to serve the Project and current and future water demands in normal, dry, and multiple dry years, and the Project would not require or result in the relocation or construction of new or expanded water supply facilities. The impact would be **less than significant**.

Rail Spur, Conveyor Belt, Roadway Improvements

These Project components would not require the use of water either for operation or for ongoing dust suppression and would therefore result in **no impact**.

Mitigation: None required.

Significance after Mitigation: Less than significant

Impact 3.14-2: The Project would generate additional solid waste. (Less than Significant)

This impact addresses Significance Criterion (d).

There are several nearby landfills with capacity to accommodate the Project's solid waste disposal needs during operation and reclamation/demolition. Based on current tonnage rates, Kirby Canyon Landfill will have capacity to remain in operation until 2059 (CalRecycle 2021b). Buena Vista Landfill has a remaining capacity of 2 million cubic yards and is estimated to close in 2031 (CalRecycle 2021c).

Construction

No existing facilities would be demolished during Project construction; therefore, construction would not generate demolition debris. Construction would not include other activities that generate large amounts of solid waste; most construction waste would be packaging from delivery of Project components and building materials (e.g., plastic wrap, pallets) and ranch-related items (e.g., barbed wire) found onsite. Pallets would be recycled locally. The non-recyclable solid waste generated during construction would be accommodated by existing landfills given the existing capacity available. Therefore, solid waste generated during construction would be a **less-than-significant** impact.

Operation

Mining Pits and Processing Plant

The quarrying and processing operations would generate solid waste typical of an industrial business, such as discarded packaging for office and operation supplies. The Project would employ up to 15 people during maximum production times, and the solid waste collected from these 15 employees (e.g., packaging from lunches eaten at the Project site) would be minimal. The Project would be required to comply with recycling requirements, which would reduce the amount of waste to be landfilled. As discussed in the Environmental Setting, there is extensive capacity available in in existing landfills, so the addition of Project waste would be a **less-than-significant** impact.

Conveyor Belts, Access Roads, Rail Spur, Roadway Improvements

Operation of these facilities and improvements would not generate substantial solid waste. Minimal quantities of greases, lubricants, and other maintenance materials would be disposed of in accordance with hazardous materials disposal requirements (see Section 3.9, *Hazards and Hazardous Materials*). Therefore, the impact on landfills would be **less than significant.**

Reclamation

Reclamation of the Project site involve removal of structures, equipment, and conveyors. The Project's scales, vehicles, conveyors, and other equipment could be resold to other parties or repurposed for ranching uses (for example to move livestock, feed, and equipment) after final reclamation is completed. While it is planned that most of the equipment identified would be salvaged rather than disposed of in a landfill, even if some equipment and materials were landfilled, existing landfills would have adequate capacity. For example, of the landfills identified above, Kirby Canyon is not projected to close for approximately 38 years and would have remaining capacity when the 30-year mining term for the Project ends and final reclamation begins.

Summary

Because there is sufficient existing capacity at area landfills, the generation of solid waste by the Project would be a **less-than-significant impact**.

Mitigation: None required.

Significance after Mitigation: Less than significant

Impact 3.14-3: Project construction and operation would comply with federal, state, and local management and reduction goals, statutes and regulations related to solid waste. (Less than Significant)

This impact addresses Significance Criterion (e).

Construction

No facilities would be demolished during construction. Therefore, construction would not generate demolition debris. Construction would not include other activities that generate large amounts of solid waste. Solid waste generated during construction would be delivered to or disposed of at a permitted disposal facility as required by County code. Compliance with local requirements would avoid significant public or environmental health effects related to storage or transport of solid waste, so the impact related to solid waste during Project construction would be **less than significant**.

Operation

Rail Spur, Conveyor Belt, Access Roads, Roadway Improvements

As discussed above, these facilities would not generate any solid waste during Project operation.

Processing Plant and Mining Pits

During operation, waste generated by employees (which would be minimal) would be hauled off weekly by the local garbage company and disposed of or recycled in accordance with state and local requirements.

Reclamation

During reclamation phases, the Project would dispose of waste in accordance with state and local health and safety ordinances (as required by SMARA).

Summary

The Project would not impair the attainment of local solid waste reduction goals because it would produce minimal solid waste (e.g., employee lunch packaging), and would comply with reduction statutes and regulations regarding solid waste, this impact would be **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant

3.14.4.4 Cumulative Analysis

The geographic scope for potential cumulative utilities and service systems impacts consists of the Project site, its immediate vicinity, and the service areas of regional service/utility providers. The geographic scope for potential cumulative impacts on solid waste facilities includes landfills within Santa Clara County. The cumulative analysis geographic scope for water supply impacts includes the Llagas subbasin and the Pajaro Valley groundwater basin, located downstream of the project site on the Pajaro River.

The following analysis focuses on impacts related to water supply utilities and service systems, capacity of local solid waste infrastructure, and attainment of solid waste reduction goals .

Impact 3.14-4: The Project would contribute to cumulative increases in demand for water supply. (Less than Significant)

As discussed in Impact 3.14-1, approximately 82 AFY of water sourced from the Llagas subbasin would supply the Project over 30 years of operations. During that period, other development may occur in areas overlying the Llagas subbasin, the downstream Pajaro Valley subbasin, or the North San Benito groundwater basin, such that water demand increases in these areas enough to require the relocation or construction of new or expanded water facilities.

As discussed in Impact 3.14-1, the Project's demand would account for less than 1 percent of the projected increase in municipal and industrial demand growth projected for the Llagas subbasin. As discussed in Section 3.10, *Hydrology and Water Quality*, the Project's demand is similarly less than 1 percent of the total water use in the Pajaro Valley subbasin. These demand increases, which have been determined to be less than significant in the context of other sources of variability in water supply for either groundwater basin, nonetheless could combine with demand from reasonably foreseeable development and cause cumulative environmental effects associated with construction or relocation of water facilities.

However, the Llagas subbasin and Pajaro Valley subbasin both are managed by groundwater sustainability agencies under adopted groundwater management plans that are functionally equivalent to groundwater sustainability plans. Pursuant to the requirements of the Sustainable Groundwater Management Act (discussed in greater detail in Section 3.10, *Hydrology and Water Quality*), the management plans of Valley Water and the Pajaro Valley Water Management Agency must account for the most recent planning assumptions of jurisdictions overlying the basins and include projects and management actions that ultimately eliminate undesirable results (such as chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply) in each groundwater basin. These plans are designed to manage groundwater such that sufficient supplies are available for future projected growth during normal, dry, and multiple dry years. Groundwater sustainability agencies have the authority to regulate groundwater extraction, including by limiting or suspending extractions from individual groundwater wells or wells in aggregate, to achieve the sustainability goals of the Sustainable Groundwater Management Act. The groundwater management plans are being implemented to improve the long-term reliability of water supply in the Llagas and Pajaro Valley subbasins.

As shown in Table 3.14-3, water supply is projected to be adequate to meet demand within the County during normal, single-dry and multiple-dry years. Because the groundwater management plans and the 2020 UWMP incorporate projects for future cumulative development in areas served by the Llagas and Pajaro Valley subbasins, and the WSA determined that the project would be consistent with these plans, the cumulative impacts on water supply would be less than significant, and the Project's incremental contribution to these impacts would not be cumulatively considerable, and thus **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant

Impact 3.14-5: The Project would contribute to cumulative increases in generation of solid waste. (Less than Significant)

Generally, the cumulative projects listed in Table 3.1-1, regardless of construction date, would dispose of construction debris at available landfills, which would contribute to reductions in available landfill capacity. As discussed in Impact 3.14-3, the Project would dispose of solid waste in a landfill. Similarly, the other cumulative projects would also generate construction debris that could be disposed at any number of landfills.

During Project construction the Kirby Canyon and Buena Vista landfills would receive waste from the project and other projects within the landfill's service area. For the purposes of this analysis, given the finite nature of landfill capacity, it is conservatively assumed there could be a significant cumulative impact on landfill capacity to which both the Project and other projects could contribute. As noted above, the Kirby Canyon and Buena Vista landfills had remaining capacities of several million cubic yards and can accept about 3,400 tons of material per day, combined (CalRecycle 2021b, 2021c).

The incremental effect of the Project's weekly and overall solid waste contribution to these landfills would be very small relative to the total daily throughput and overall landfill capacity. As a result, the effects of the project's contribution to a significant cumulative impact on landfill capacities would not be cumulatively considerable, and the impact would be **less than significant**.

Mitigation: None required.

Significance after Mitigation: Less than significant

3.14.5 References

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Valley Water. 2016. Groundwater Management Plan, November.

Valley Water. 2020. Annual Groundwater Report 2019. July.

Valley Water. 2021a. 2020 Urban Water Management Plan. June.

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3.15 Wildfire

3.15.1 Introduction

This section addresses impacts of the Project related to wildfire. The California Environmental Quality Act (CEQA) issues evaluated include the potential for the Project to exacerbate wildfire risks and thereby to expose people to wildfire or to pollutant concentrations from a wildfire, to require the installation or maintenance of infrastructure that may exacerbate fire risks, and to expose people or structures to significant risks resulting from post-fire runoff, slope instability, or drainage changes. The County of Santa Clara (County) received no comments regarding wildfire in response to the Notice of Preparation (Appendix A).

The following discussion is informed by the Sargent Ranch Quarry Project Fire Protection Plan (FPP) that is included as Appendix L to this Environmental Impact Report. There would be no impacts on impairing an adopted emergency response plan or emergency evacuation plan, as discussed in Section 3.9, *Hazards and Hazardous Materials*.

3.15.2 Regulatory Setting

3.15.2.1 Federal

National Fire Protection Association (NFPA) 22, Standard for Water Tanks for Private Fire Protection

NFPA Standard 22 provides requirements for the design, construction, installation, and maintenance of tanks and accessory equipment that supply water for private fire protection.

3.15.2.2 State

California Public Resources Code Sections 4201 to 4204

The California Public Resources Code, Sections 4201 to 4204, directs the California Department of Forestry and Fire Protection (CAL FIRE) to map fire hazards within State Responsibility Areas (SRA).[1] The maps, created by CAL FIRE's Fire and Resource Assessment Program (FRAP), are based on data related to development patterns, estimated fire behavior characteristics, and expected burn probabilities. The maps quantify the likelihood and nature of vegetation fire exposure to new construction. Hazards are described according to their potential for causing ignitions to buildings. These zones, referred to as Fire Hazard Severity Zones (FHSZ), provide the basis for application of mitigation strategies to reduce risks to buildings associated with wildland fires. The zones also relate to the requirements for building codes designed to reduce the ignition potential to buildings in wildland–urban interface (WUI) zones. The Project site is located within designated High and Moderate FHSZs (CAL FIRE 2007).

1 SRAs are the official boundaries where the State of California (through CAL FIRE) has the primary legal and financial responsibility for the prevention and suppression of wildland fires. CAL FIRE provides a basic level of wildland fire prevention and protection services for these designated areas (CAL FIRE 2012). SRAs are generally located in non-urbanized areas that are outside of city boundaries.

California Public Resources Code Fire Safety Requirements

Several sections of the California Public Resources Code also include fire safety requirements that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment that use an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on site for various types of work in fire-prone areas. These requirements include the following:

- Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (Section 4442)
- Appropriate fire suppression equipment shall be maintained during the highest fire danger period – from April 1 to December 1 (Section 4428)
- On days when a burning permit is required, flammable materials shall be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor shall maintain the appropriate fire suppression equipment (Section 4427)
- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines shall not be used within 25 feet of any flammable materials (Section 4431)

California Fire Code Chapter 47

The California Fire Code is contained within Title 24, Chapter 9 of the California Code of Regulations. Chapter 47 of the California Fire Code sets requirements WUI fire areas that increase the ability of buildings to resist the intrusion of flame or burning embers being projected by a vegetation fire, in addition to systematically reducing conflagration losses through the use of performance and prescriptive requirements. The Project site is located in a WUI area (SWCA 2016, Figure 4.2).

Defensible Space and the Fire Safe Regulations

State law requires a minimum clearance (defensible space) of 100 feet around structures within SRAs (Pub. Res. Code Sections 4290 and 4291). Implementing regulations (the “Fire Safe Regulations”) provide related requirements to be implemented in an SRA, including road standards for fire equipment access (14 Cal. Code Regs. Section 1273 et seq.); standards for signs identifying streets, roads, and buildings (14 Cal. Code Regs. Section 1274 et seq.); requirements for minimum private water supply reserves for emergency fire use (14 Cal. Code Regs. Section 1275 et seq.); and requirements for fuel breaks such as defensible space and greenbelts (14 Cal. Code Regs. Sections 1272, 1276 et seq.).

California Strategic Fire Plan

The 2018 Strategic Fire Plan for California is the most recent statewide plan for the adaptive management of wildfire (CAL FIRE 2018). The central goals that are critical to reducing and preventing the impacts of fire revolve around both suppression efforts, natural resource management, and fire prevention efforts. The relevant goals of the Strategic Fire Plan include promoting the role of local planning processes, including county-based plans and community-based plans such as

Community Wildfire Protection Plans (CWPPs), and recognizing individual landowner/homeowner responsibilities. The Fire Plan does not contain any specific requirements or regulations. Rather, it acts as an assessment of current fire management practices and standards and makes recommendations on how best to improve the practices and standards in place (CAL FIRE 2018). The County of Santa Clara has prepared a CWPP, described below, that implements the community-based wildfire planning goal of the Strategic Fire Plan.

3.15.2.3 Local

There are no General Plan wildfire strategies or policies that would apply to the Project.

Santa Clara County Fire Department Standards and Specifications

The Santa Clara County Fire Department (SCCFD) provides Fire Marshal services (building permits, building inspections, and code violations) to the portion of the county in which the Project site is located, but is not the emergency services agency that provides fire protection in this location; see Section 3.15.3 for more details on emergency services.

SI-7 Construction Site Safety

This standard requires development and implementation of a written FPP for significant or complex construction projects at the discretion of and approved by the fire department. The FPP must include procedures for reporting emergencies to the fire department, emergency notification and evacuation of all persons on the site, hot work operations, management of hazardous materials, removal of combustible debris, and maintenance of emergency access roads. It also must include plans identifying the locations of exits, the designated exterior assembly areas for each evacuation route, and required fire apparatus access roadways and on-site fire hydrants or water tanks (SCCFD 2009). The Project-specific FPP is intended to comply with this requirement, is included as Appendix L, and is considered part of the Project.

CFMO-A3 Installation of Security Gates for Access Roads and Driveways

This specification requires that gates installed across a required fire department access road or driveway must have prior approval of the County Fire Marshal's Office, specifies allowable lock types and required override switches, and specifies width, swinging and sliding specifications, and other requirements for gates to allow fire department access (SCCFD 2003).

Santa Clara County Community Wildfire Protection Plan

In 2016, the SCCFD commissioned the preparation of a Santa Clara County CWPP to address the multijurisdictional scope of wildfire preparation (SWCA 2016). The CWPP is a countywide strategic plan with goals for creating a safer WUI community. The purpose of the CWPP is to assist in protecting human life and reducing property loss due to wildfire throughout the planning area. The CWPP includes an analysis of fire apparatus access, community evacuation, fuels, topography, and weather conditions for several different areas in Santa Clara County. The CWPP prioritizes and identifies fuel-reduction treatments and recommends measures and action items that residents and communities can take to reduce the ignitability of structures.

The Office of the County Fire Marshal provides education, plan review, inspection, and code enforcement for the county regarding fire issues. The Fire Marshal, who also serves as the Chief of the Santa Clara County Fire Department, is responsible for fire prevention activities in most unincorporated areas of the county. Authority for the Fire Marshal is derived from Section A33-47 of the County Code and Section 101 of the California Fire Code. The County Fire Marshal has the authority to make and enforce such rules and regulations for the prevention and control of fire and fire hazards (SWCA 2016).

The CWPP goals and policies shown in **Table 3.15-1** would apply to the Project.

TABLE 3.15-1
RELEVANT COMMUNITY WILDFIRE PROTECTION PLAN POLICIES

ID	Project Description	Land Disposition and Responsibility	Method	Resources Available
Strategic Goal FR7: Develop roadside fuel treatment program, including suite of methods available and sustainability mechanism				
SCC-FR7.1	Improve ingress/egress capabilities through installation of fuel breaks and brushing	SCC WUI areas. Public and privately owned/maintained road systems.	Limb trees and remove brush along roadways to at least reclaim full original width and height. Goal: minimum 20' clear width and 15' clear height.	County General Fund Budget. CAL FIRE crews – County Public Works budget. Local community groups - donations and grant funding. USDA-NRCS
SCC-FR7.2	Install roadway buffers and cut grass earlier in the season	All WUI areas, Public and privately owned/maintained road systems.	Limb trees and remove brush along roadways to at least reclaim full original width and height. Goal: minimum 20' clear width and 15' clear height. Cut grass earlier.	CAL FIRE crews - Public Works budget. Local community groups - donations and grant funding.
SCC-FR7.3	Improve man- made fuel breaks around individual structures or groups of residences	All WUI areas. Public and privately owned/maintained road systems.	Clear brush, limb trees, and remove dead woody materials, located within 10' of road edges.	CAL FIRE crews - Public Works budget. Local community groups - donations and grant funding.
Strategic Goal FC13: Develop a coordinated approach between fire jurisdictions and water supply agencies to identify needed improvements to the water distribution system, initially focusing on areas of highest wildfire hazard.				
SCC FC13.3	Mapping of available private water supplies	SCFSC, CAL FIRE	Increase knowledge of available water sources prior to a wildfire event to improve fire response capability.	
Strategic Goal FC8: Where road systems are antiquated and do not provide for proper evacuation or two-way flow, require removal of obstructions or upgrade to minimum two-lane road system over time.				
SCC-FC8.1	Improve ingress/egress capabilities. All areas in SCC FPD	SCC FPD and CAL FIRE	Establish secondary access roads in current single access areas. Ensure the safe and rapid evacuation of residents during fire response and suppression activities	County General Fund - Public Works budget. Local community groups - donations and grant funding

SOURCE: SWCA 2016.

3.15.3 Environmental Setting

3.15.3.1 Project Site Fire Hazard Designations

The Project site is located in the West Gilroy WUI area, which is defined as an area “where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels” (Fire Management Board 2019). The Project site also is located within two different FHSZs within the SRA: the Project’s mining areas and processing plant are located within a designated High FHSZ; the access roadway (Old Monterey Road) and free-span bridge are located in a Moderate FHSZ (CAL FIRE, 2007).

3.15.3.2 Wildland Fire Protection

The South Santa Clara County Fire District (SSCCFD) provides fire and rescue services to the Project site vicinity through a contract with CAL FIRE. The SSCCFD encompasses approximately 320 square miles of unincorporated areas in the southern portion of Santa Clara County, including Coyote Valley, portions of Almaden Valley, Casa Loma, Uvas-Svedal, the Pacheco Pass area, and the unincorporated area directly surrounding the cities of Morgan Hill and Gilroy (including the Project site). The SSCCFD participates actively in automatic aid agreements with the Morgan Hill, Gilroy, Pajaro Valley, Hollister, and San Jose Fire Departments (the closest engine responds regardless of jurisdiction) (SSCCFD 2021). The nearest SSCCFD fire station to the Project site is Gilroy Fire Station #61 at 7070 Chestnut Street in Gilroy (SCCFC 2020); however, Hollister Station #4 is slightly closer to the Project site and may respond to incidents at the site per automatic aid agreements.

The Santa Clara County Unit of CAL FIRE, with its headquarters in Morgan Hill, is administratively in charge of CAL FIRE operations in Santa Clara County. Normal CAL FIRE wildland response includes chief officers, fire engines, air tankers (Hollister Air Attack Base), helicopter (Alma Heli Base), fire dozers, and hand crews (Ben Lomond Camp). SSCCFD/CAL FIRE initial response to the Project site would be primarily from Treehaven, Morgan Hill, Masten, Coyote, Corralitos, Almaden, Hollister, and Pacheco fire stations. Morgan Hill and Gilroy Fire Departments also would respond with mutual aid.

3.15.3.3 Climate and Fuels

Santa Clara County has a Mediterranean climate, with most precipitation occurring during the winter months and virtually no precipitation from spring though autumn. The Santa Cruz mountains typically have the highest precipitation totals, approximately 40 to 60 inches per year, compared to the relatively dry Santa Clara Valley where the city of San Jose has average totals of 12 inches (SWCA 2016). The Project site is within the drier portion of Santa Clara County.

This area routinely experiences westerly afternoon winds exceeding 20 miles per hour, which can spread fires faster and blow embers great distances to cause spot fires and ignite structures some distance away. Summer “Diablo Winds” can carry hot, dry air from the Central Valley over the Diablo Range, which then flows across Santa Clara Valley and then upslope over the Santa Cruz Mountains from a northerly direction towards the Monterey Bay (SWCA 2016).

Vegetation within the Project site consists of predominantly annual grasslands, chaparral and northern coastal scrub, oak and conifer woodland, and riparian forests (see Appendix E). The majority of the Project site consists of the California annual grasslands vegetation/fuel type, which can generate fast-moving but low-intensity wildfires (Dudek 2020).

3.15.3.4 Fire History

There have been 10 recorded wildfires larger than 10 acres ("large wildfires") that have occurred within 5 miles of the Project site. These ranged in size from 12 acres to 1,867 acres (1981 Herbert Fire) and the average size was approximately 343 acres. The 2017 Bally Fire (109 acres) is the most recent large fire; it occurred approximately 4 miles north of the Project site. Additional large fires located within 5 miles of the Project site include the 1984 Rocha EMP Escape #2 Fire (1,240 acres); the 2002 Merrill fire (64 acres); the 2005 156 Fire (16 acres); the 2007 Avenida Fire (34 acres); the 2010 Salinas Fire (12 acres); the 2011 Red Barn Fire (22 acres); the 2011 Rocks Fire (13 acres); and the 2015 Betabel Fire (56 acres). The SSCCFD or the Gilroy Fire Department may have data regarding smaller fires (equal to or less than 10 acres) that have occurred on the site that have not been included herein. There have not been any recorded large wildfires that have burned onto the Project site (Dudek 2020).

3.15.4 Impact Evaluation

3.15.4.1 Approach to the Analysis

This section evaluates whether the Project would exacerbate wildfire risk and/or contribute to temporary or ongoing environmental impacts by exposing either people or structures to significant risks (i.e., pollutant concentrations, flooding, landslides, drainage changes) as a result of wildfire. It also analyzes whether people or structures would be exposed to a significant risk of loss, injury, or death involving wildfires. The following analysis relies upon information provided in the Sargent Ranch Quarry Project FPP (Appendix L), which includes a site-specific fire environment/risk analysis, and incorporates input from the County and local fire jurisdictions. The FPP identifies and considers several factors contributing to wildfire risk at the Project site, including topography, slope, combustible vegetation or fuel types, climate, fire history, and proposed land use. The Project would adhere to all fire risk reduction measures, daily fire prevention measures, fire prevention/protection system maintenance, and hot work safety guidelines described in detail in the FPP. The FPP is considered part of the Project description.

3.15.4.2 Significance Criteria

The Project would result in a significant impact related to wildfire if it would:

a) 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.

b) 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.

c) 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.

d) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Due to the nature of the Project, the following criterion is not analyzed in this section for the reasons described below:

- ***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.*** The Project would include the improvement and maintenance of access roads, and their potential to exacerbate fire risk is addressed throughout the impact discussions in Section 3.15.4.3. The temporary and ongoing impacts on the environment of all Project infrastructure, including access roads, are analyzed throughout this EIR. Therefore, no additional specific impact analysis is needed to address this significance criterion.

There would be no impacts on impairing an adopted emergency response plan or emergency evacuation plan, as discussed in Section 3.9, *Hazards and Hazardous Materials*.

3.15.4.3 Project Impacts

Impact 3.15-1: The Project could exacerbate wildfire risks and could thereby expose people to pollutant concentrations from a wildfire or expose people or structures to risk of loss, injury, or death involving wildland fires. (Less than Significant)

This impact addresses Significance Criteria (a) and (d).

Construction and Reclamation

All Project Components

The primary fire hazards from Project activities during construction and reclamation of all Project components would involve the use of typical construction vehicles and equipment, including earth moving equipment, chainsaws, and woodchippers. Additionally, “hot work” construction activities that could result in sparks, such as use of welders, grinders, and torches, have a greater likelihood of creating a source of ignition. Heat or sparks from vehicles and equipment, or from other sources such as large compost piles or cigarettes, matches, or generators, could ignite dry vegetation and cause a fire, particularly during drier, warmer conditions. Therefore, due to the increase in potential sources of ignition, Project construction and reclamation could increase the risk of surrounding communities’ exposure to pollutant concentrations and risk of loss, injury, or death from wildfire and the uncontrolled spread of wildfire to a level that is higher than currently exists. However, prevailing winds in this area blow to the west, away from any workers at the processing plant and away from U.S. 101, and in a direction where there are no nearby communities, residences, businesses, or structures.

Project design and implementation of the FPP (Dudek 2020) would reduce the risk of ignition and provide for the suppression of wildfires if ignitions occur. Consistent with Public Resources Code requirements, all earthmoving and portable equipment would be equipped with spark arrestors to reduce the potential for igniting a wildland fire during the highest fire danger period from April 1st to December 1st. As detailed in the FPP, during construction and reclamation activities, the following measures would be implemented to prevent the uncontrolled spread of wildfire:

- Minimize combustible and flammable materials storage on site and store any combustible or flammable materials that need to be on site away from ignition sources.
- Label all containers of potentially hazardous materials with their contents and store in the same location as flammable or combustible liquids.
- Clear parking areas and fuel or oil storage areas of grass and brush by a distance of at least 30 feet.
- Keep evacuation routes free of obstructions.
- Perform "hot work" according to fire safety practices in a controlled environment and with fire suppression equipment at the job site. A fire watch person (Fire Patrol), with extinguishing capability (e.g., fire extinguishers), would be in place for all "hot work" activities during construction. Ensure hot work adheres to the guidelines provided.
- Dispose of combustible waste promptly and according to applicable laws and regulations.
- Report and repair fuel leaks without delay.
- Do not overload circuits or rely on extension cords where other options would be safer.
- Turn off and unplug electrical equipment when not in use.
- Direct contractors on site to restrict use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives during Red Flag Warnings. When such tools are used, a water truck equipped with hoses, shovels, Pulaskis (axe/adzes), and McLeods (rakehoes) shall easily be accessible to personnel.
- Equip all construction-related vehicles with a dry chemical fire extinguisher, a backpack pump fire extinguisher, a shovel, and a first aid kit.
- When an evacuation has been called, site employees would gather at the designated assembly area and the site safety officer (SSO) would account for personnel. Once all personnel are accounted for, the vehicles would safely convoy from the Project site to safe zones, which are generally areas off site and away from the threat.

Implementation of these fire prevention and suppression measures would substantially reduce the risk of the uncontrolled spread of a wildfire, and consequently reduce the risk of surrounding communities' exposure to pollutant concentrations from wildfire or to risk of loss, injury, or death from wildfire. Thus, as a result of Project design and commitments made by the Applicant for construction and reclamation, the impact during these phases would be **less than significant**.

Operation

The Project would not be inhabited because it would not include a residential component. Up to 15 employees would be present during business hours, as well as customers picking up aggregate.

Mining Pits and Conveyor Belts

Mining activities would involve similar earth-moving equipment and vehicles to those described for construction and reclamation. These would result in similar potential for sparks; however, following removal of topsoil from the mining pits, there would be little to no ignitable material in the pits near where this equipment would be operating. Additionally, the spark arrestor requirements and risk reduction measures for vehicles and equipment described above would apply to vehicles and equipment used during this phase during the highest fire danger period from April 1st to December 1st. Therefore, the likelihood of ignition of wildfire from within the mining pits would be low. Conveyor belts would be used for sand and gravel transportation from the mining pit to the processing plant, rather than trucks, which would reduce potential fire risks from vehicle-related ignitions during mining.

Furthermore, the Applicant would maintain a portable 10,000-gallon water tank on site at all times, which would move with each mining phase. Water would be stored in the aboveground water tank in compliance with County and SSCCFD requirements and with NFPA 22, Standard for Water Tanks for Private Fire Protection (Dudek 2020). The tank would be inspected regularly and placed on the side of the fire access road with adequate space to allow fire engines to park and connect to the tank while leaving the road open to other travel (see Chapter 2, *Project Description*, for more information). The portable water tank location would be determined by a Fire Protection Engineer and submitted for approval by the County. With these protections in place, coupled with the low risk of ignition from mining and conveyor belt components, the impact would be **less than significant**.

Access Roads and Roadway Improvements

The Project would involve vegetation removal and maintenance along roadways to and from the Project site as required by CAL FIRE in SRAs and in compliance with the County of Santa Clara Standards for Fire Department Vehicle Access. The required minimum vertical clearance over vehicular access roads and driveways would be 15 feet for SRAs and County-designated Ranchlands and a minimum of 13.5 feet for all other areas. Per the Project-specific FPP (Dudek 2020), the Applicant would maintain a 20-foot Fuel Modification Zone (FMZ) on each side of the access roads. In addition, the proposed improved roadway shoulders would reduce fire risks and facilitate evacuations of employees in the event of a wildfire-related emergency. Additional fuel modification and vegetation management would be conducted by May 15 of each year. Additional risk reduction measures related to the use of access roads would include equipping all vehicles with fire prevention equipment, prohibiting driving over unmaintained dry vegetation, and maintaining mufflers on cars and light-duty trucks. These Project design features and commitments would remove ignitable materials and reduce the potential for sparks from use of Project access roads during the highest fire danger period from April 1st to December 1st, ensuring that the impact from the use of roads would be **less than significant**.

Processing Plant and Rail Spur

The aggregate processing facility structures would be constructed to the County Fire Code, which has adopted the 2019 California Fire Code standards, and all proposed structural buildings would comply with the enhanced ignition-resistant construction standards of the California Building

Code (Chapter 7A) and Chapter 5 of the Urban Wildland Interface code (Dudek 2020). These requirements would harden structural components such as roofs, eaves, exterior walls, vents, appendages, windows, and doors, which would reduce structural vulnerability to wildfire. The Project would also include a 100-foot FMZ buffer zone around each building and structure within the proposed processing plant area. Additional FMZs would also be applied around the equipment storage yard, 17-space parking area, truck scales, and loading area. Designated plantings for defensible space would consist of low-growing ground cover selected from an approved plant list and all appropriate spacing would be reviewed and approved by the SSCCFD Fire Marshal (or other authorized fire jurisdiction Fire Marshal) as described in the CWPP and Public Resources Code Sections 4290 and 4291. FMZ specifications outlined in the FPP include non-combustible surfaces (e.g., gravel, dirt) if applicable, clearing and removal of all existing native vegetation or prohibited plants and replaced with drought tolerant native species, each planting area would also be maintained at a height of 6 inches or less (See FPP in Appendix L for details regarding a customized fuel modification plant list). These Project design features would minimize ignitable materials and reduce the potential for sparks from use of equipment and vehicles at the processing plant, ensuring that the impact would be **less than significant**.

Summary

Project compliance with the requirements of Public Resources Code Sections 4442 and 4428 for appropriate fire suppression equipment (i.e., spark arrestor, fire extinguisher, water backpack, shovel, axe, and first aid kit) during the highest fire danger period from April 1st to December 1st would reduce the risk of uncontrolled fire. Compliance with identified CWPP goals and policies identified previously would also reduce fire risks. While the Project has the potential to exacerbate wildfire risks by introducing new sources of ignition into a High/Moderate FHSZ, compliance with applicable Public Resources Code requirements, California Fire Code standards, and CWPP goals, and implementation of the fire prevention and suppression methods outlined in the FPP would ensure that Project-related wildfire risk (and risks of pollutant exposure and loss, injury, or death caused by wildfires) is not substantially higher than baseline wildfire risk, resulting in a **less-than-significant impact**.

Mitigation: None required.

Significance: Less than significant

Impact 3.15-2: The Project could expose people or structures to risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. (Less than Significant)

Construction, Operation, and Reclamation

All Project Components

This impact addresses Significance Criterion (c). As described under Impact 3.15-1, the Project would not substantially exacerbate fire risks because fire prevention and suppression measures have been included in the design of the Project as well as in measures required to be implemented under the Project-specific FPP. Therefore, the Project would have minimal potential to result in flooding, landslides, slope instability, or drainage changes as a result of the uncontrolled spread of a wildfire. Furthermore, stormwater BMPs described in Section 3.10, *Hydrology and Water Quality*, would be consistent with the requirements of the state construction and industrial general permit preventing substantial increases in the volume of stormwater draining from the site. As a result, people or structures would not be exposed to significant risks as a result of runoff, post-fire slope instability, or drainage changes, and the impact would be **less than significant**.

Mitigation: None required.

Significance: Less than significant

3.15.4.4 Cumulative Analysis

Impact 3.15-3: The Project could result in a cumulatively considerable contribution to a significant cumulative impact related to wildfire. (Less than Significant)

Depending on the pathway of migration for or nature of future wildfires, the geographic scope for cumulative effects related to wildfire would be the air basin, watershed boundary, or extent of adjacent wildlands. If the Project were to contribute to wildfires in the vicinity of the Project site, this could happen at any point during construction, operation, and reclamation; therefore, the temporal scope of cumulative impacts extends through the life of the Project, including through final reclamation. The Project site is located within a High and Moderate Fire Hazard Severity Zones and within a WUI area.

Cumulative projects (including those identified in Table 3.1-1, *Cumulative Projects List*, as well as continuing and projected development within the geographic scope that is not captured in the table) could involve ignition sources such as smoking, vehicle or mobile equipment use, generators, small fires (campfires, barbeques), and electrical equipment that could contribute to a cumulative risk of wildfire in the vicinity of the Project site. The closest cumulative project anticipated to occur near the Project site is the widening of and upgrades to U.S. 101 from Monterey Road in Gilroy to State Route 129 in San Benito County. The proximity of that project would include additional ignition sources within cumulative impact study area from vehicles during construction. However, that project’s impact would be limited to construction and result in a temporary condition; long-term ignition sources such as vehicle traffic and cigarette smoking would be similar to existing conditions. All cumulative projects in would be subject to the same Public Resources Code requirements for spark arrestors and fire suppression equipment. Highway projects, such as the U.S. 101 widening project, also would be subject to fire safety measures from the Caltrans Construction Manual (Caltrans 2021).

The Project’s adherence to fire prevention and suppression measures outlined and described in detail in the FPP would minimize its contribution to an adverse cumulative wildfire impact. The incremental impact of additional ignition sources during Project construction would not be cumulatively considerable because the risk of Project-related wildfire ignition would be substantially reduced and/or suppressed quickly, thereby minimizing the likelihood of spread of Project-related wildfire ignitions.

As noted above in Section 3.15.4.3, *Project Impacts*, the Project would not include any permanent housing and would not expose people to any increased level or risk associated with wildfires or wildfire-related flooding, landslides, or post-fire slope instability. The closest cumulative project that would include housing or living quarters would be the Dae Seung Sa Korean Buddhist Temple, which would be located approximately 8.5 miles upslope from the Project site in a predominantly residential area. The construction and operation of that project would not be located downslope or downstream of the Project and would not be impacted by any potential post-fire conditions such as landsliding, even if such conditions were to result from Project-associated fires (identified as unlikely under Impact 3.15-1). Associated off-site, post-fire soils risks at the Betabel RV Park would not increase due to multiple cumulative scenario fires because the RV park is only downstream and downslope from the proposed quarry site and not the other cumulative projects. Additionally, the Project would reduce the risk of the spread of fire to near baseline conditions with the implementation of the FPP, coordination with the County Fire Departments, and Public Resource Code standards. Therefore, the potential for post-fire flooding or landslides would be less than significant.

Based on the above analysis, the Project's incremental impact would not be a cumulatively considerable contribution to a significant cumulative impact related to wildfire risks, and therefore would be **less than significant**.

Mitigation: None required.

Significance: Less than significant

3.15.5 References

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CHAPTER 4
Alternatives Analysis

4.1 Introduction

CEQA requires lead agencies to consider alternatives to proposed projects with significant environmental impacts, and that an EIR provide information about alternatives (Pub. Res. Code Sections 21001, 21002, 21002.1, 21003.1, 21061). Section 15126.6 of the CEQA Guidelines requires that an EIR identify alternatives that would reduce a project's significant impacts while meeting most of the basic objectives of the project. The CEQA Guidelines emphasize a "rule of reason" approach to the analysis, stating that the alternatives shall be reasonable, "foster informed decision making and public participation," and focus on alternatives that would avoid or substantially lessen the project's significant environmental impacts.

The proposed Project consists of open-pit mining that will occur in four areas in four phases, and construction and operation of processing and mining-related facilities, including an aggregate processing plant, office/scale house, process water pond, stormwater basins, conveyor belt, access/maintenance roads, a free-span bridge over Tar Creek, and a new groundwater well.

The Phase 1 and 2 mining areas are located in the northern portion of the Project site (see Figure 2-2, Project Site and Vicinity, in Chapter 2, Project Description). Estimated production from Phases 1 and 2 are shown below in Table 64-1. Phases 1 and 2 combined would disturb approximately 152.34 acres, exclusive of geotechnical setback areas (approximately 81.64 acres). For a more complete description of Phases 1 and 2, please see Chapter 2, Project Description.

TABLE 4-1
ESTIMATED MINING AND EXCAVATION QUANTITIES (CUBIC YARDS)

Mining Phase	Product	Topsoil[a]	Overburden[b]	Excavation Total
Phase 1	9,600,000	375,000	3,325,000	13,300,000
Phase 2	11,900,000	300,000	4,100,000	16,300,000
Total	21,500,000	675,000	7,425,000	29,600,000

NOTES:

a. Topsoil represents approximately the top 2 feet of soils on the site.
b. Overburden is the material (e.g., soil and rock) that lies above the economically valuable mineral resources; in this case the mineral resources are sand and gravel suitable for use as concrete grade aggregate.

SOURCE: Freeman Associates, Sargent Quarry Mining and Reclamation Plan, February 2022. Table 4.

Phases 3 and 4 would be located in the southern portion of the Project site (see Figure 2-2 in Chapter 2, Project Description), and would require construction of a conveyor belt connecting the Phase 3 and 4 mining areas to the processing plant. Estimated production from Phases 3 and 4 are shown below in Table 4-2. Phases 3 and 4 would disturb approximately 67.23 acres, exclusive of geotechnical setbacks, which could disturb up to an additional 23.46 acres. For a complete description of Phases 3 and 4, please see Chapter 2, Project Description.

TABLE 4-2
ESTIMATED MINING AND EXCAVATION QUANTITIES (CUBIC YARDS)

Mining Phase	Product	Topsoil[a]	Overburden[b]	Excavation Total
Phase 3	2,565,000	135,000	900,000	3,600,000
Phase 4	1,240,000	36,000	540,000	1,816,000
Total	3,805,000	171,000	1,440,000	5,416,000

NOTES:
a. Topsoil represents approximately the top 2 feet of soils on the site.
b. Overburden is the material (e.g., soil and rock) that lies above the economically valuable mineral resources; in this case the mineral resources are sand and gravel suitable for use as concrete grade aggregate. February 2022. Table 4.

4.1.1 Guidelines for Selection of Alternatives

The requirement that an EIR evaluate alternatives to a Project or alternatives to the location of a project is a broad one, since the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained while reducing the magnitude of, or avoiding entirely, the significant environmental impacts of the Project. According to the CEQA Guidelines Section 15126.6(f):

> 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 determined could feasibly attain most of the basic objectives of the project.

In the context of CEQA, "feasible" is defined in CEQA Guidelines Section 15364 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.

Further, the following factors may be considered in the assessment of the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control. Finally, an EIR is not required to analyze alternatives when the effects of the alternative "cannot be reasonably ascertained and whose implementation is remote and speculative." (CEQA Guidelines Section 15126.6(f)(3)).

Based on the above guidance, alternatives were selected for review that would meet most of the basic project objectives, would reduce one or more of the significant impacts of the Project, would be reasonable and potentially feasible, and would not be speculative.

The following alternatives are evaluated in this chapter:

1. **Alternative 1 - No Project Alternative**: Assumes that no mining or aggregate processing occurs on the Project site, and that the current uses continue.
2. **Alternative 2 - Phases 1 and 2 Only and Processing Plant Relocation**: Phases 1 and 2 would be mined at the same level as the Project, but the Phases 3 and 4 sites would not be mined. The crossing over Sargent Creek and the conveyor belt/access road would not be constructed because access to the Phases 3 and 4 sites would not be needed. The amount of aggregate product produced under this alternative would be 21.5 million cubic yards (cy), an approximate 15 percent reduction compared to the Project as proposed.

   The processing plant would be moved approximately 0.85 miles north of Tar Creek. In addition, Old Monterey Road would be realigned, and the Tar Creek bridge would be located upstream of the location proposed for the Project.

   Other aspects of this alternative would be the same as the proposed Project.
3. **Alternative 3 – Reduced Phases 1 and 2 Only, Processing Plant Relocation, and Addition of Screening Berm**: This alternative would be similar to Alternative 2, except that a screening berm would be constructed along the Phase 1 mining pit and the mining activities would not occur above 500 feet mean sea level (msl). In addition, there would be a 15 percent reduction in the amount of aggregate mined in Phases 1 and 2, for a total reduction in mining of 28 percent.

In addition to the description provided for each alternative, this chapter provides a comparative analysis of the potential environmental effects resulting from each alternative, and the extent to which each alternative would support the project objectives.

4.2 Project Objectives

As stated on page 2-7 of Chapter 2, Project Description, the project objectives are:

1. Develop a long-term source of high-quality aggregate needed for various uses in the County and other local markets, in furtherance of General Plan Policy R-RC 68;
2. Ensure that mining occurs in an environmentally responsible and sensitive manner that is consistent with the California Surface Mining and Reclamation Act (SMARA) and County requirements;
3. Locate the source of aggregate in proximity to one or more major transportation corridors and in proximity to local construction contractors and others in need of such materials, who otherwise might have to seek and transport such materials from more distant sources;

4. In furtherance of General Plan Policy R-RC 78, provide an alternative to truck transport of construction aggregates by using the Union Pacific Railroad rail spur adjacent to Sargent Ranch to replace haul trucks to the extent feasible;
5. Develop the aggregate resource in a manner that is economically feasible;
6. Minimize impacts on sensitive natural and cultural resources on the Project site;
7. Minimize aesthetic impacts through site design, phasing, and concurrent reclamation; and
8. Implement a reclamation plan that provides for long-term slope stability, prevents wind and water erosion, and establishes self-sustaining native and naturalized vegetation cover.

4.3 Significant Project Impacts

The alternatives analysis addresses significant impacts of the Project, including both impacts that can be reduced to less-than-significant levels and those that would remain significant even after implementation of identified mitigation measures.

4.3.1 Significant and Unavoidable Impacts

The following significant and unavoidable impacts could result from implementation of the Project.

- **Aesthetics**: The Project would have a significant and unavoidable impact, both at the Project-specific level and cumulatively, with regard to the effect on existing visual character or quality of public views of the Project site and its surroundings from U.S. 101, a County-designated scenic highway (Impact 3.2-1). Mitigation Measure 3.2-1 would lessen the severity of these impacts but not below the level of significance. This significant unavoidable impact would also be cumulatively significant and unavoidable (Impact 3.2-3).
- **Air Quality**: The Project would have a significant and unavoidable impact with regard to its effect on BAAQMD NOx thresholds and emissions of NOx, ROG, PM 2.5, and PM 10 for which the region is in nonattainment status. Mitigation Measures 3.3-2a and 3.3-2b would reduce NOx but not below significance thresholds for project-specific or cumulative impacts (Impacts 3.3-1, 3.3-2 and 3.3-5).). This significant unavoidable impact would also be cumulatively significant and unavoidable (Impact 3.3-5).
- **Biological Resources**: The Project would have a significant and unavoidable impact with regard to the Project's interference with wildlife movement. Mitigation Measure 3.4-15 would reduce this impact but not below the threshold of significance (Impact 3.4-15). This significant unavoidable impact would also be cumulatively significant and unavoidable (Impact 3.4-22).
- **Cultural and Tribal Cultural Resources**: The Project would have a significant and unavoidable impact both at the Project-specific level and cumulatively with regard to changes in the significance of tribal cultural resources within the proposed area of development, and the Juristac Tribal Cultural Landscape (Impacts 3.5-4, 3.5-5, and 3.5-9). Mitigation Measures 3.5-1, 3.5-3b, 3.5-4b and 3.5-5b would reduce the severity of these impacts, but not to a less-than-significant level.

- **Geology, Soils, and Paleontology**: The Project would have a significant and unavoidable impact with regard to the Project's potential to destroy paleontological resources important to Santa Clara County (Impact 3.7-5). Mitigation Measure 3.7-5 would not reduce impacts to a level of insignificance. This impact would also be considered cumulatively significant and unavoidable (Impact 3.7-6).
- **Transportation**: The Project would have a significant and unavoidable impact with regard to the Project's generation of additional Vehicle Miles Traveled (VMT), and no feasible mitigation is identified to reduce the impact (Impact 3.13-2). This impact would also be cumulatively significant and unavoidable (Impact 3.13-5).

4.3.2 Less than Significant with Mitigation

Significant impacts that could be reduced to less-than-significant levels with identified mitigation measures are summarized below:

- **Biological Resources**: Impacts on the following special-status species and/or their habitat: special-status plant species, special-status fish, California red-legged frogs (CRLF), California tiger salamanders (CTS), western pond turtles, burrowing owls, tricolored blackbirds, raptors and other protected birds, special-status bats, mountain lions, San Francisco dusky-footed woodrats, American badgers; adverse effects on jurisdictional wetlands and other waters; conflicts with County ordinances and policies intended to protect biological resources, including oak woodlands.
- **Cultural and Tribal Cultural Resources**: Adverse impacts on known historical or archaeological resources; damage to unrecorded subsurface prehistoric and historic archaeological resources; disturbance of human remains.
- **Geology, Soils, and Paleontology**: Increased potential for slope instability and slope failure.
- **Greenhouse Gas Emissions**: Generation of greenhouse gas emissions (GHG); conflict with applicable GHG plans, policies, or regulations.
- **Hazards and Hazardous Materials**: Accidental release of existing soil contaminants, such as historic pesticide residues.
- **Hydrology and Water Quality**: Substantially degrade surface or groundwater quality.
- **Transportation**: Roadway hazards due to the presence of large construction trucks, temporary lane closures and detours; inadequate emergency access.

4.4 Alternatives Discussion

4.4.1 Alternatives Considered and Eliminated from Further Analysis

The following alternatives initially were considered, but were not evaluated in detail because they would not achieve the primary objective of developing a long-term source of aggregate, they are infeasible, and/or they would not reduce the significant impacts of the Project.

Offsite Location

In considering an alternative location in an EIR, the CEQA Guidelines advise that consideration of “whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location” (CEQA Guidelines §15126.6(f)(2)(A)). The CEQA Guidelines do not require analysis of off-site alternatives in every case. Only locations that would avoid or substantially lessen any of the significant effects of the project and meet most of the project objectives need be considered in an EIR’s alternatives analysis. In determining whether potential alternative sites are feasible, factors to be considered include whether the project proponent could reasonably acquire, control or otherwise have access to the alternative site. CEQA Guidelines §15126.6(f)(1).

The Project is an aggregate mine and processing facility. A project of this nature and type is only viable within areas that are known to contain accessible aggregate materials. To be considered feasible, properties must meet the necessary requirements for approval and successful operation of an aggregate quarry and processing plant, including the following:

- Sufficient size: The location of the quarry/aggregate resource must be buffered from surrounding sensitive receptors to avoid impacts and ensure feasibility;
- Known high-quality reserve of aggregate material;
- Proximity to major transportation corridor;
- The site must be available for mining; and
- Distance to markets: The site must be close enough to its customer base to be delivered efficiently and at a reasonable cost.

A potential alternative location for the Project was considered and rejected as infeasible and overly speculative for the reasons described below.

There are significant obstacles to finding an alternative site location for potential purchase by the Project Applicant. First, consideration of available lands would be limited to those with access to a major freeway and/or rail line that are within 30 miles of the greater Bay Area market. This limits the potential properties to those in the vicinity of the current site location, given that locating a quarry farther to the north would put it into areas with more urban development patterns that are not feasible for sand and gravel (the raw materials for aggregate) quarry development. To the south of the site is an area designated by the State as having a high likelihood of mineral resources. However, there are several existing quarries (Stevens Creek Quarries in San Juan Bautista Plant and Aromas and Logan Quarry), making it highly unlikely that a third quarry would be feasible given the lack of land, limited space, and smaller parcel sizes (California Department of Conservation, 1999).

To the north of the site is a reclaimed hard rock quarry and urban development in the City of Gilroy. While some mineral resources have been identified even farther north (in unincorporated County areas near San Martin), the small parcel sizes and proximity of developed areas (which include agricultural, commercial, and residential uses) make development of an aggregate mine infeasible. To the northwest, the terrain is extensively wooded and inaccessible by vehicle and no rail lines are present (UPRR, 2019; BNSF, 2019), making access to these sites difficult. Further, these lands are not within an identified Mineral Resource Zone by the State. Directly west (in Santa Cruz County) are lands that have been identified as having a high likelihood of the presence of mineral resources or where information is inadequate to make an assessment of likelihood. These lands are, however, only accessible from the west side of the Santa Cruz range, requiring long haul trips to transport aggregate to the areas where it is in demand east of the mountain range. The sites are zoned Timber Production (TP), Commercial Agriculture (CA), and Commercial Agriculture with an Agricultural Preserve and Farmland Security Combining District (CA-P). Mining is not allowed on land zoned CA or CA-P. These areas are heavily wooded, and the topography and terrain would make access and mining challenging given current practices. These areas also contain habitat for sensitive for plant and wildlife species and contain intermittent and perennial water features and riparian areas (County of Santa Cruz, 2019).

CEQA Guidelines Section 15126.6(f)(2)(B) specifically recognizes mining projects to be an example of why evaluation of an alternative location may not be feasible, because the location of any mineral resources is fixed to the specific site, cannot move, and may not be available elsewhere. This is the primary reason why a specific alternative location for the Project could not be identified and is not considered further in this EIR.

Alternative Use

An alternative new use for the Project site was considered and rejected. The Project site is currently used for a cattle operation, which is consistent with the zoning. Mining and associated aggregate processing are allowed uses subject to first obtaining a Use Permit. The Project site is not zoned for urban uses, such as housing and commercial development. While the site could be rezoned, a housing and/or commercial use alternative would not achieve any of the project objectives. In response to the Notice of Preparation for the Project, it was suggested that there could be a better use of the Project site mining, such as a park. While a park may have fewer environmental impacts than an aggregate mine (depending on the type of park and its layout), it would not meet any of the project objectives and so has not been carried forward for detailed review.

4.5 Alternatives to the Project

Each of the three potentially feasible alternatives for detailed consideration is described below, followed by a discussion of the extent to which the impacts of the alternative would be similar, less severe than or more severe than the impacts of the Project. A comparison of the relative impacts of the Project and alternatives is provided in Table 4-5 at the end of this chapter. Consistent with CEQA, the comparison focuses on the potential significant impacts of the Project; less-than-significant impacts are not addressed.

4.5.1 Alternative 1: No Project

CEQA Guidelines Section 15126(d)(4) requires that an EIR specifically discuss a “No Project” alternative, which shall address both the existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project is not approved. The CEQA Guidelines stipulate that an EIR specifically include a "No Project" alternative to allow decision-makers to compare the impacts of approving the project with the impacts of not approving the project. The CEQA Guidelines specifically advise that the No Project alternative be what would be reasonably expected to occur in the foreseeable future if the project is not approved.

Description

Under the No Project Alternative, the site would remain under its current grazing use.[1] Agricultural cultivation also could occur and would be allowed by right without the need to secure a land use entitlement or County permit; however, the site historically has been used for cattle grazing and there is no evidence that cultivation of crops other than hay for cattle would occur. Therefore, this analysis assumes that there would be no change in the current agricultural uses.

Relationship of Alternative 1 to Project Objectives

The No Project Alternative would not meet any of the Project's objectives.

Environmental Analysis

Impacts Identified as Being the Same or Similar to the Project

Alternative 1 would not have any impacts that are the same or similar to the Project, because no mining would occur, and no improvements would be made to the Project site, Old Monterey Road or U.S. 101.

Impacts Identified as Being Less Severe than the Project

All of the impacts identified for the Project would be avoided under Alternative 1, because there would be no change to existing conditions.

Impacts Identified as Being More Severe than the Project

Based on the existing conditions documented in Chapter 3, no impacts identified for the Project would be more severe under the No Project alternative. It is possible that the demand for aggregate could lead to another similar project being developed elsewhere in the region, and that such a project would have impacts on the environment. The nature and severity of such impacts would depend, among other factors, on the location and conditions of the site to be mined and its distances traveled for deliveries and employees. Because it would be speculative to make

1 At a regular meeting on January 23, 2018, the County of Santa Clara Board of Supervisors approved a referral to County Administration to work with interested conservation partners and property owners to explore the opportunity to acquire the property or easements to conserve all or some of the Sargent Ranch property. The County of Santa Clara Parkland Acquisition Plan 2012 Update ("Update") identifies suitable zones for acquisition of lands reflecting the policies of the Parks and Recreation Element of the General Plan. The Update does not represent an absolute plan for targeted properties. Figure 5-1 (p. 59) of the Update identifies areas of potential acquisition, including the future Castro Valley Park zone. This zone includes property surrounding the Sargent Ranch property. The acquisition of the property for potential habitat and/or parks and recreation purposes can be considered as a variation of the No Project Alternative that also would not meet any of the Project's objectives. Acquisition would have similar impacts as the No Project Alternative; potential end uses and their impacts are too speculative to evaluate in this EIR.

assumptions about how exactly aggregate demand would be met in the future, for the purposes of this EIR, no impacts would result from the No Project alternative. However, it should be noted that to the extent that aggregate is exported from outside of the Bay Area in order to meet demand for aggregate within the Bay Area, impacts related to transportation, including air and greenhouse emissions and noise, could be more severe than the impacts of the proposed Project.

4.5.2 Alternative 2: Phases 1 and 2 Only and Relocated Processing Plant

This alternative is designed to reduce impacts on Tribal Cultural Resources by eliminating the impacts on the Betevel Bluff and archaeological site CA-SCL-578/H, and reduce the extent to which the processing plant would disturb wildlife movement. This alternative would also reduce impacts associated with grading, mining, processing, and transportation activities by reducing the amount of aggregate that would be mined.

Description

Elimination of Phases 3 and 4

Under Alternative 2, mining would occur at Phases 1 and 2 as described for the Project, but Phases 3 and 4 would be eliminated. The conveyor belt/access road connecting Phases 3 and 4 to the processing plant and the crossing of Sargent Creek would also be eliminated.

A total of 21.5 million cy (32.25 million tons) of product would be mined and processed under Alternative 2 (as compared to 25.3 million cy or 38 million tons for proposed Project), a reduction of 3.8 million cy or 5.7 tons of material. A total of 29.6 million cy would be excavated under Alternative 2 (as compared to 35 million cy under the proposed Project), a reduction of approximately 5.4 million cy. This represents an approximately 15.5 percent reduction in the amount of total excavation and a 15.1 percent reduction in the amount of product that would be processed and sold. **Table 4-3** summarizes the amount of aggregate, overburden and topsoil that would be excavated under Alternative 2.

TABLE 4-3
ALTERNATIVE 2: ESTIMATED MINING AND EXCAVATION QUANTITIES (CUBIC YARDS)

Mining Phase	Product	Topsoil[a]	Overburden[b]	Excavation Total
Phase 1	9,600,000	375,000	3,325,000	13,300,000
Phase 2	11,900,000	300,000	4,100,000	16,300,000
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Total	21,500,000	675,000	7,425,000	29,600,000

NOTES:
a. Topsoil represents approximately the top 2 feet of soils on the site.
b. Overburden is the material (e.g., soil and rock) that lies above the economically valuable mineral resources; in this case the mineral resources are sand and gravel suitable for use as concrete grade aggregate.

SOURCE: Freeman Associates, Sargent Quarry Mining and Reclamation Plan, February 2022. Table 4.

Relocated Processing Plant

Under Alternative 2, the processing plant would be relocated approximately 1 mile north of the location proposed by the Project (see **Figures 4-1 and 4-2**). This alternative processing plant site is outside of the Project site, but within Sargent Ranch. The alternative site is relatively flat, but would require more grading than the site proposed by the Project. There are several oak trees on the alternative site, and they would remain in place. Plant equipment and stockpiles would be located to avoid the trees.

The processing plant would include the same components as delineated for the Project, including the aggregate processing plant, shop and maintenance buildings, vehicle parking areas, storage yard (miscellaneous equipment and materials), office/scale house, stockpiles (product, overburden, and topsoil), process water pond, storm water basins and groundwater well.

With the relocation of the processing plant, a screening berm would not be necessary adjacent to U.S. 101 due to the processing plant distance from U.S. 101 (over 500 feet). Instead, a solid fence would be constructed around the perimeter of the plant.

The processing plant would be of similar size to the Project plant, 14 acres, but would be relocated adjacent to Old Monterey Road, approximately 0.75 mile south of the U.S. 101 exit and approximately 0.85 mile north of the Tar Creek crossing (see Figure 4-2). Under Alternative 2, Old Monterey Road would be improved and maintained to accommodate haul trucks. However, this alternative would eliminate the ability to access northbound U.S. 101 on the east side of the highway (as shown in Figure 2-11, Ingress and Egress). Rather, northbound trucks—approximately 40 percent of the total truck trips—would depart the processing plant via Old Monterey Road onto U.S. 101, head south on U.S. 101, and turn around at Betabel Road/Y Road to travel north.

South of the alternative processing plant site, Old Monterey Road would be realigned to the northwest and the bridge across Tar Creek would be located upstream (west) of the bridge site proposed by the Project (see Figure 4-1). A new (minimum) 15-foot-wide roadway would be constructed with a similar free-span crossing of Tar Creek at the new location. A conveyor belt also would be constructed along the roadway alignment between the processing plant and the Phase 1 mining site. The conveyor belt would be approximately 1 mile long, and would be elevated at intervals to allow wildlife to pass beneath, similar to the conveyor belt to the Phases 3 and 4 area under the Project.

Other Components of the Project

Other components would be identical to the Project, including Phase 1 and 2 mining, the conveyor belt between the Phase 1 and 2 mining areas, the location of the overburden stockpile, and improvements to Old Monterey Road.

Under Alternative 2, the amount of mining-related ground disturbance would be reduced from approximately 298.2 acres to 218.2 acres (exclusive of geotechnical setbacks) due to the elimination of Phases 3 and 4 and the screening berm. The elimination of the geotechnical setbacks for Phases 3 and 4 would reduce ground disturbance by an additional 23.46 acres. Total disturbance under Alternative 2 would be approximately 299.3 acres, compared to 403.29 acres under the Project, a reduction of approximately 26 percent.

Alternative 2 would occur over the same period as the Project. It is assumed that the processing plant, conveyor belt to Phases 1 and 2, Tar Creek bridge and road improvements would occur in the first year, and that mining would occur over a 30-year period. Because the amount of aggregate mined and processed would be reduced by 15 percent, but the mining period of 30 years would not change, the amount of product produced each year would be reduced. The maximum amount of product that would be produced would be 5,100 tons on a single day, and 1.581 million tons per year.

The hours of operation would accordingly be reduced to 7:30am to 5:00 pm. These hours of operation would be consistent with the County Code, so a variance would not be required. Reclamation activities would be identical to the Project, except that they would not occur in the Phase 3 and 4 area.

A schedule for Alternative 2 is provided in **Table 4-4**.

TABLE 4-4
TENTATIVE SCHEDULE OF CONSTRUCTION, MINING, AND RECLAMATION ACTIONS

Actions	Begin	Completed	Excavation Total (cy)	Product Total (cy)
Project Approvals and Permitting	n/a	March 2023		
Project Construction	March 2023	December 2023		
Phase 1: Mining	January 2024	January 2037	13,300,000	9,600,000
Reclamation	February 2037	February 2042		
Phase 2: Mining	February 2037	February 2053	16,300,000	11,900,000
Reclamation	March 2053	March 2058		
Removal of Plant and Final Reclamation	May 2058	May 2058		

SOURCE: Freeman Associates, Sargent Quarry Reclamation Plan, February 2022.

The number of employees for construction, operation and reclamation would be the same as for the Project.

Relationship of Alternative 2 to Project Objectives

Alternative 2 would meet all of the Project Objectives, although not to the extent the Project would. Alternative 2 would provide for a long-term source of high-quality aggregate, although less than would be available under the Project. Thus it would not achieve an important Project objective, developing a long-term source of high-quality aggregate needed for various uses in the County and other local markets, as well as the proposed Project. Like the Project, Alternative 2 would be consistent with SMARA, use rail transport to partially offset the use of haul trucks, and implement a reclamation plan that provides for slope stability, prevents erosion and establishes self-sustaining native and naturalized vegetation cover. As discussed in greater detail, below, Alternative 2 would reduce impacts on sensitive natural and cultural resources compared to the Project by reducing the extent of grading and excavation, relocating the Tar Creek bridge away from the wildlife crossing, and avoiding the Betevel Bluff Tribal Cultural Resource.

Environmental Analysis Impacts Identified as Being the Same or Similar to the Project as Proposed

Biological Resources

The impact on San Francisco dusky-footed woodrat would be similar to the Project, due to the construction of a crossing of Tar Creek, where its nests have been observed (Impact 3.4-12). Mitigation Measure 3.4-12 would reduce this to a less-than-significant level for both the Project and Alternative 2.

Alternative 2 would partially reduce certain impacts on jurisdictional and other waters by avoiding intermittent and ephemeral drainages located in the Phase 3 mining area and the footprint of the conveyor belt and Sargent Creek (Impacts 3.4-14 and 3.4-21). Specifically, under Alternative 2, impacts on creeks, streams and drainages would be reduced by approximately 900 feet, or 13 percent compared to the Project (see Table 3.4-1). Impacts on the stock pond in the Phase 2 area, seasonal wetlands and wetland seep would be the same as the Project, because these features occur within the Phase 1 and 2 mining areas and/or other components that would be part of either Alternative 2 or the Project.

As discussed above, a seasonal pond is located near the site of the relocated processing plant under Alternative 2. The plant site included in the Project does not contain any jurisdictional or other waters. Impacts on the seasonal pond would therefore be more severe due to the proximity of the relocated processing plant to a seasonal pond. Sufficient area is available to construct the plant at this location while avoiding a direct impact to the pond. However, development of a processing plant at this site could reduce inflow to the pond from surface runoff (Impacts 3.4-14 and 3.4-21). For both the Project and Alternative 2, impacts on jurisdictional and other waters would be reduced to a less-than-significant level with the implementation of Mitigation Measure 3.4-14.

Because Alternative 2 would reduce the impacts on creeks, streams and drainages relative to the Project, but at the same time could adversely affect the pond near the relocated processing plant, the impact on jurisdictional and other waters is, on balance, similar to the impact of the Project.

Alternative 2 would have a similar impact on those County ordinances and policies that are intended to protect biological resources (Impact 3.4-16 and 3.4-23). Heritage trees and 99 percent of coast live oak forest and woodland within the Project site are located in areas that would be disturbed under Alternative 2, primarily the Phase 1 and 2 mining and geotechnical setback areas. Therefore, this impact would be similar to the Project, and would be less than significant with the implementation of Mitigation Measure 3.4-16.

Hazardous Materials

Under both Alternative 2 and the Project, the permanent overburden stockpile would be located in an area that may have been subject to pesticide use in the past (Impacts 3.9-2 and 3.9-3). This impact would be less than significant with the implementation of Mitigation Measure 3.9-2 for both the Project and Alternative 2.

Impacts Identified as Being Less Severe than the Project as Proposed

Air Quality

Alternative 2 would generate air emissions similar to the Project, but at a reduced amount due to the elimination of Phases 3 and 4. Project emissions are estimated to exceed NOx, PM2.5, and PM10 standards on a daily basis and NOx and PM10 on an annual basis (see Table 3.3-6 and Impacts 3.3-1, 3.3-2, and 3.3-5). Under Alternative 2, the amount of aggregate mined and processed on a daily and annual average would be reduced by approximately 15 percent. Alternative 2 would also reduce the amount of fugitive dust generated by construction due to the elimination of the conveyor belt and access road to Phases 3 and 4. Air emissions associated with construction and mining activities would be reduced by approximately 15 percent.

This reduction would be partially offset by an increase in vehicle miles traveled due to the relocation of the processing plant. The processing plant would be approximately one mile closer to the U.S. 101 exit under Alternative 2, which would reduce the length of travel by haul trips to the plant by two miles (roundtrip). At the same time, under Alternative 2, these trucks would have a longer route to access U.S. 101 northbound, because they would go south to the Betevel exit, and then access northbound U.S 101. The distance between the on-ramp and the Betevel off-ramp is approximately five miles. The net increase in each haul trip would be approximately 6.5 miles. As discussed in more detail under **Transportation,** below, under Alternative 2 there would be an approximately 11 percent reduction in haul truck-related VMT (offsite), which would reduce vehicle-related emissions (off-site haul trips are the largest single source of Project NOx emissions). The elimination of Phases 3 and 4 would also reduce the number of trips and distance traveled on unpaved roads within the Project site, which are the main sources of both PM10 and PM2.5 emissions. While total emissions would be lower under Alternative 2 compared to the Project, they would continue to exceed the same thresholds. Mitigation Measure 3.3-2 would reduce the amount of daily average NOx and annual PM10 to below the significance thresholds but average daily emissions of PM10 would remain above the threshold. Therefore, the impact would remain significant and unavoidable, but would be less severe under Alternative 2. Further, while the applicable thresholds are daily and annual, the total emissions over the 30-year term of the mining permit would be reduced due to the reduction in mining activity.

Biological Resources

Alternative 2 would reduce impacts on most special-status species and their habitat. Based on the acreages shown by phase in Table 3.4-1 in Section 3.4, Biological Resources, Alternative 2 would disturb approximately 234 acres of annual grasslands, compared to 337 acres under the Project, an approximate 31 percent reduction. Alternative 2 would result in the loss of 10.87 acres of mixed riparian habitat, compared to 11.41 acres under the Project, an approximately 5 percent reduction. Impacts associated with other habitat types would be similar to the Project.

The Project site provides suitable habitat for 11 special-status plant species. Under Alternative 2, the plant habitat that could be lost to ground disturbance would be reduced due to the elimination of Phases 3 and 4 and the conveyor belt connecting these areas to the processing plant under the Project. (Impacts 3.4-1 and 3.4-17). Similarly, Alternative 2 would reduce the disturbance of habitat for special-status wildlife species, including burrowing owls (Impact 3.4-7); tricolored black birds (Impact 3.4-8); raptors and migratory birds (Impact 3.4-9); mountain lion (Impact 3.4-11); and badgers (Impact3.4-13) and cumulative impacts on these terrestrial species (Impact 3.4-20). Mitigation Measures 3.4-1, 3.4-4(a) through (c), 3.4-5(c), 3.4-7, 3.4-8, 3.4-9, 3.4-13 and 3.4-15 would be required to reduce impacts on these species and their habitat to a less-than-significant level; nevertheless, the impacts would be less severe under Alternative 2.

Because Alternative 2 would not require a crossing over Sargent Creek, the impact on potential special-status fish habitat would be reduced (Impacts 3.4-3 and 3.4-19). The reduction in disturbance area would also reduce the potential for erosion and contaminants to degrade water quality, lessening the impact on habitat for fish. Mitigation Measure 3.4-3 would ensure that this impact would be less than significant for both the Project and Alternative 2. Like the Project, the design of the Tar Creek bridge would benefit fish under Alternative 2, because the bridge would span the creek so that traffic no longer drives through the creek bed.

Alternative 2 would reduce the impact on California red-legged frog (CRLF) (Impact 3.4-4) by eliminating the potential for breeding ponds to be created in the Phase 3 and Phase 4 areas; by eliminating changes in the vicinity of the pond located south of Phase 3; and by reducing the loss of uplands and riparian habitat due to the elimination of Phases 3 and 4 and the associated conveyor belt. Mitigation Measures 3.4-4 and 3.4-5 would still be required to reduce impacts on these species and their habitat to a less-than-significant level; nevertheless, the impact would be less severe under Alternative 2.

Western pond turtle, which has been documented in a pond 1,100 feet south of the processing plant site, also could take advantage of ponds created within quarries, the creeks, and uplands, and therefore be vulnerable to harm during construction and operation (Impact 3.4-6). Alternative 2 would reduce the potential for harm of this species by reducing the number of quarries, the crossing of Sargent Creek and the amount of acreage that would be disturbed. Mitigation Measures 3.4-3, and 3.4-4(a) and (b) would reduce impacts on the species and its habitat to a less-than-significant level for both the Project and Alternative 2, but the impact would be less severe under Alternative 2 than for the Project.

Alternative 2 would reduce the loss of habitat for two special-status bat species that have the potential to occur within the Project site--western red bat and pallid bat (Impact 3.4-10) by reducing the amount of annual grassland that is disturbed by approximately 31percent (from 337 acres to 234 acres and the amount of mixed riparian woodland and forest by 0.54 acres, or about 5 percent (see Table 3.4-1). Mitigation Measure 3.4-10 would still be required to reduce impacts on these species and their habitat to a less-than-significant level under Alternative 2, but the impact would be less severe than under the Project.

Under the Project, the only significant and unavoidable impact on biological resources would be due to impediments to wildlife movement between important U.S. 101 undercrossings (particularly the Tick Creek, Tar Creek/UPRR, and Pajaro River undercrossings) (Impacts 3.4-15 and 3.4-22). In particular, the proximity of the processing plant, the rail spur and Project traffic to the Tar Creek undercrossing could interfere with wildlife movement. Under Alternative 2, the processing plant would be located approximately 0.85 mile from the Tar Creek undercrossing of U.S. 101, so it would substantially reduce the impediment to wildlife movement at Tar Creek and Pajaro River undercrossings.

Alternative 2 would include approximately 1 mile of the conveyor belt to connect the processing plant to the Phase 1 and 2 mining areas. Most of the conveyor belt would be located along Old Monterey Road, so it would be in an area where there is already some disturbance. The rail spur would still be needed, and there would be some infrastructure associated with loading rail cars, but that would be farther from the undercrossing than the Project plant site. The Alternative 2 site would be 0.2 mile from the Tick Creek undercrossing, so it would likely deter some wildlife from using that culvert. However, the Tick Creek undercrossing is not nearly as heavily used by mammals, particularly large mammals, as Tar Creek and the Pajaro River.

Under Alternative 2, the Tar Creek bridge would be relocated upstream, farther from the U.S. 101 undercrossing. Because heavy truck traffic would not be allowed south of the processing plant under Alternative 2, there would be less vehicle traffic using this bridge, and in the vicinity of undercrossing. There would also be some reduction in the severity of the impact due to the elimination of the Phase 3 and 4 quarries and the 1.6-mile long conveyor belt to Phases 3 and 4, which could also deter wildlife from moving across the Project site.

While Alternative 2 would substantially reduce impacts on wildlife movement, the impact would still be significant due to the conveyor belts which would extend across the entire western side of both the Tar Creek and Pajaro River crossing locations (i.e., wildlife moving to and from each undercrossing would have to navigate that belt at some point). Therefore, Mitigation Measure 3.4-15 would be required of Alternative 2, and the impact would remain significant and unavoidable.

Cultural Resources

There are two known archaeological sites (CA-SCL-578/H and CA-SLC-577/H), one of which may contain human remains, that would be affected by truck traffic using Old Monterey Road and the road that would be used to access northbound U.S. 101(Impacts 3.5-1, 3.5-3, 3.5-6 and 3.5-8). Under Alternative 2, Old Monterey Road would be rerouted to avoid archaeological site CA-SCL-578/H (Impacts 3.5-1, 3.5-2, 3.5-3, 3.5-6 and 3.5-8). In addition, heavy truck traffic would not be able to use the road and underpass to access U.S. 101, further avoiding this archaeological site. Therefore, Alternative 2 would not have an adverse impact on known resources associated with CA-SCL-578/H. Further, the number of truck trips on these roads would be reduced by approximately 15 percent under Alternative 2, so there would be less wear and tear on the road. The northern segment of Old Monterey Road would still be used to access the processing plant, so the impact on CA-SCL-577/H would be substantially lessened but still significant. While this would create less potential for damage to the archaeological sites, Mitigation Measures 3.5-1 and 3.5-3b still would be needed to reduce the impact to a less-than-significant level.

Alternative 2 would disturb approximately 104 fewer acres, most of which are considered highly sensitive for archaeological resources (Impacts 3.5-2 and 3.5-7) by eliminating Phases 3 and 4. Mitigation Measure 3.5-1 would still be necessary to reduce the potential for damage to resources in the Phase 1 and 2 mining areas, the processing plant, the bridge and the roads. As with the Project, these impacts would be less than significant with mitigation incorporated.

Alternative 2 would substantially reduce the impacts on Tribal Cultural Resources (Impacts 3.5-4, 3.5-5 and 3.5-9). As discussed above, the impacts on CA-SCL-578/H and CA-SLC-577/H, which are individually Tribal Cultural Resources, would be reduced due to the relocation of the processing plant and circulation changes, and the reduction in truck traffic (Impact 3.5-4). The impact on the Betevel Bluff would be entirely eliminated because it would be undisturbed. Therefore, Impact 3.5-4 would be less than significant with implementation of Mitigation Measure 3.5-1 under Alternative 2, compared to the significant and unavoidable impact (even with mitigation) that would occur under the Project. The impact on the Juristac Tribal Cultural Landscape (JTCL) would be less severe under Alternative 2 due to the reduction in acreage that would be disturbed and the avoidance of Betevel Bluff (Impact 3.5-4). Nonetheless, the alteration of the JTCL, including impacts related to topography and/or vegetation would be substantial, and the impacts would therefore be significant. Impacts 3.5-5 and 3.5-9 would be significant and unavoidable, even with implementation of Mitigation Measure 3.5-5.

Geology, Soils, and Paleontological Resources

Under the Alternative 2, approximately 104 fewer acres would be disturbed, and fewer mine bench cuts would be made. The potential for slope-stability impacts to occur would be eliminated in the Phase 3 and 4 area (Impact 3.7-2). Although this impact would be reduced, Mitigation Measure 3.7-2 would still be required to address potential slope instability at Phases 1 and 2 to a less-than-significant level.

Significant-and-unavoidable paleontological impacts also would be reduced due to a smaller area of highly sensitive geological layers being disturbed; however, this impact would remain significant and unavoidable due to excavation at Phases 1 and 2 (Impacts 3.7-5 and 3.7-6), even with implementation of Mitigation Measure 3.7-5.

Greenhouse Gas Emissions

Under Alternative 2, the area that would be disturbed would be reduced by approximately 19 percent and the amount of excavation would be reduced by approximately 15.5 percent. Vehicle miles travelled would also be reduced, but by approximately 8 percent due to the increased trip length for northbound trucks and employees (see transportation discussion below). Therefore, this alternative would generate fewer overall GHG emissions compared to emissions that would be generated under the Project (see Impacts 3.8-1 and 3.8-2). Nonetheless, Alternative 2 would generate substantial GHG emissions, a significant impact, so the impact would require Mitigation Measure 3.8-1 to be reduced to a less-than-significant level.

Hydrology and Water Quality

The area that would be disturbed during construction would be reduced under Alternative 2 due to the elimination of the conveyor belt to the Phase 3 and 4 mining site (Impacts 3.10-1 and 3.10-10). Consequently, the potential for degradation of water quality due to soil erosion during construction would be reduced. As with the Project, this impact would be a less-than-significant impact with Mitigation Measure 3.4-4 in Section 3.4, Biological Resources, which addresses water quality.

Transportation

Under Alternative 2, there would be an approximately 15 percent reduction in haul truck trips commensurate with the reduction in the amount of aggregate being processed and sold (Impacts 3.13-2 and 3.13-5). The number of employees is assumed to be unchanged, so there the number of employee trips would be the same as the Project. As discussed under Air Quality, the prohibition on the use of the undercrossing and access to the northbound onramp near the Project site would result in a net increase in each outbound, northbound haul trip of approximately 6.5 miles. In addition, employees heading northbound would increase their trip lengths by approximately 6.5 percent. This would offset the reduction in the number of trips, so that the total reduction in VMT would be approximately 8 percent. Therefore, this significant and unavoidable impact under Alternative 2 would be only slightly less severe than under the Project.

Under Alternative 2, there would be no improvements to the northbound on-ramp to U.S. 101. Therefore, the potential for conflicts between on-ramp construction and highway traffic, as well as potential interference with emergency vehicles, would be reduced (Impacts 3.13-3, 3.13-4 and 3.13-6). However, such conflicts could occur due to delivery of wide loads and other construction activities that would occur under both Alternative 2 and the Project. In both cases, these impacts would be less than significant with implementation of Mitigation Measure 3.13-3.

Impacts Identified as Being More Severe than the Project as Proposed

Aesthetics

Under the Project, Phases 3 and 4 and the conveyor belt would be mostly obscured by surrounding topography and would not be clearly visible from U.S. 101 or other sensitive viewpoints. Therefore, removing Phases 3 and 4 under Alternative 2 would not substantially reduce the visual impacts of mining.

Under Alternative 2, the processing plant would be relocated to about one mile north of the location proposed by the Project. No screening berm would be constructed; rather, a fence would be installed around the perimeter of the processing plant. During initial Project construction, the visual impacts of Alternative 2 would be similar to those of the Project. As Project construction progresses, the visual impacts of Alternative 2 would be slightly worse than those of the Project as the screening berm would not be present to block views of the final stages of Project construction.

During operation of Alternative 2, unobstructed views would be available of Phase 1 and 2 mining from some viewpoints (Impacts 3.1-1 and 3.2-3). The Project would include a screening berm which would screen views of the mining equipment and activities at the lower elevations of the hillsides during Phases 1 and 2. Under Alternative 2, no screening berm would be in place, so views from U.S. 101 of the mining site and surrounding landscape would be more open than under the Project. Views of mining activities would be partially obscured by the overburden stockpile, which would be located approximately 300 feet from the highway, adjacent to Phase 1 (see Figure 4-1). This stockpile would be up to 90 feet tall. Because it would be setback from the highway, it would not fully block views of mining activity like the Project screening berm. But any equipment or activity that occurred below the top of the stockpile would be obscured, and it would interrupt the line-of-sight to some activities in the distance. However, equipment and mining activity on the upper hills would be visible. Further, the stockpile itself would be an artificial structure introduced into the viewshed. Because there would be no screening berm, mining activities for Phases 1 and 2 would be more visible from U.S. 101 than under the Project, and would result in a high change to views from the highway.

The processing plant would be surrounded by a fence, and would be farther from U.S. 101 than under the Project, but the addition of a fenced facility would result in a moderate to high change in views from an additional U.S. 101. For these reasons, compared to the Project, operation of Alternative 2 would result in more severe aesthetic impacts.

The Project would result in aesthetic impacts during project reclamation as the screening berm would remain in place and would continue to block views of the surrounding hillsides and the reclaimed project hills, resulting in a significant amount of visual contrast compared with pre-Project conditions. Under Alternative 2, there would be no screening berm; therefore, reclamation activities would be more visible from U.S. 101. While elimination of the screening berm would allow for broader views of the landscape, and reclamation would involve regrading and revegetating the Project site to resemble pre-Project conditions, the ultimate visual appearance of the hills on the Project Site would differ substantially from existing conditions. For these reasons, Alternative 2 would result in a high degree of visual change compared to existing conditions.

Mitigation Measure 3.2-1, as revised below, would reduce the significant visual impacts of Alternative 2 described above. However, even with mitigation, views of the Project site would be substantially altered during operation and after reclamation. Therefore, the visual impacts of Alternative 2 would be significant and unavoidable and would be more severe than those of the Project.

> **Mitigation Measure 3.2-1(a):** Once constructed, the Applicant shall contour the ~~screening berm~~ northern and eastern edges of the overburden stockpile to resemble surrounding land features, to the extent possible, and shall plant fast-growing native vegetation. ~~The screening berm shall either be extended around the northern portion of the processing plant, or fencing and vegetation shall be used to further screen views of the processing plant from southbound traffic on U.S. 101. Native vegetation and/or trees shall be planted around the northern portion of the processing plant to further screen views of the processing plant from viewpoints on southbound U.S. 101 that would not be blocked by the screening berm.~~ The proposed final design for screening shall be reviewed by the County prior to construction in order to ensure that views of the processing plant and other mining activities are screened to the extent possible by a combination of ~~the screening berm,~~ fencing~~,~~ and vegetation in order to achieve a natural appearance.

Biological Resources

Alternative 2 would partially reduce the impact on California tiger salamander (CTS) (Impact 3.4-5) by eliminating the potential for breeding ponds to be created in the Phase 3 and Phase 4 areas; by eliminating changes in the vicinity of the pond located south of Phase 3; and by reducing the loss of uplands and riparian habitat due to the elimination of Phases 3 and 4 and the associated conveyor belt. At the same time, the processing plant would be located immediately adjacent to a seasonal pond that is used by CTS for breeding. Even if the pond itself is not directly affected, placing the processing plant in this location could reduce runoff that supports ponding in that feature. Further, the plant would occupy upland dispersal and refugial habitat used by salamanders, and could impede the movement of salamanders to and from that pond. Mitigation Measures 3.4-4 and 3.4-5 would still be required to reduce significant impacts on these species and their habitat to a less-than-significant level; nevertheless, the impact would be more severe under Alternative 2.

4.5.3 Alternative 3: Reduced Phases 1 and 2 Only, Relocated Processing Plant and Addition of Screening Berm

The intent of Alternative 3 is to reduce impacts on Tribal Cultural Resources and sensitive habitats, similar to Alternative 2. In addition, Alternative 3 would address visual impacts by constructing a berm adjacent to the Phase 1 mining area, and would reduce VMT and air and GHG emissions by substantially reducing the amount of mining.

Elimination of Phases 3 and 4 and Reduction in Mining

Similar to Alternative 2, under Alternative 3, Phases 3 and 4 would not be mined. In addition, the amount of mining in Phases 1 and 2 would each be reduced by 15 percent. As a result, the amount of aggregate to be mined and processed would be reduced to 18.3 million cy (27.4 million tons) compared to 25.3 million cy under the Project, a reduction of approximately 7.1 million cy (10.6 million tons), or 28 percent.

Relocation of Processing Plant

As with Alternative 2, the processing plant would be relocated approximately 1 mile north of the location proposed by the Project (see Figures 4-1 and 4-2). The processing plant would occupy approximately 14 acres, and would include the same components as delineated for the Project, including the aggregate processing plant, shop and maintenance buildings, vehicle parking areas, storage yard (miscellaneous equipment and materials), office/scale house, stockpiles (product, overburden, and topsoil), process water pond, storm water basins and groundwater well.

Screening Berm

With the relocation of the processing plant, a screening berm would not be necessary adjacent to U.S. 101. However, without the screening berm, the mining area would be visible from the highway. Therefore, unlike Alternative 2, a screening berm would be constructed closer to the mining area. Under Alternative 3, the screening berm would be located at the edge of the Phase 1 mining area, approximately 400 feet west of U.S. 101. The berm would be approximately 35 feet tall (from ground surface) and 300 feet long, occupying approximately 0.3 acre. The berm would be constructed of overburden taken from the Phase 1 mining area. After all mining is complete, the berm would be removed, and the area would be reclaimed.

In addition to including a screening berm, to reduce the visual impact of mining under Alternative 3, the mining would not occur at elevations above 500 feet (msl), so that the upper levels of the mining area would remain intact.

Excavation Summary

Under Alternative 3, the amount of aggregate to be mined and processed would be reduced as a result of the elimination of Phases 3 and 4 and the retention of the upper levels of the Phase 1 mining area. As shown in **Table 4-5**, the total amount of aggregate to be mined would be reduced to 18.28 million cy or 27.41 million tons, a reduction of approximately 28 percent compared to the Project. A total of 25.13 million cy would be excavated under Alternative 3 (as compared to 35 million cy under the proposed Project). This represents a 28 percent reduction in the amount of total excavation.

Other Components of the Project

Other components would be identical or similar to the Project and Alternative 2, including construction and mining techniques and equipment, the conveyor belt between the Phase 1 and 2 mining areas, the location of the overburden stockpile, and improvements to Old Monterey Road.

TABLE 4-5
ALTERNATIVE 3: ESTIMATED MINING AND EXCAVATION QUANTITIES (CUBIC YARDS)

Mining Phase	Product	Topsoil[a]	Overburden[b]	Excavation Total
Phase 1	8,160,000	318,750	2,826,250	11,305,00
Phase 2	10,115,000	255,000	3,485,000	13,855,000
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Total	18,275,000	573,750	6,311,250	25,160,000

NOTES:
[a] Topsoil represents approximately the top 2 feet of soils on the site.
[b] Overburden is the material (e.g., soil and rock) that lies above the economically valuable mineral resources; in this case the mineral resources are sand and gravel suitable for use as concrete grade aggregate.

SOURCE: Modified from Freeman Associates, Sargent Quarry Mining and Reclamation Plan, February 2022. Table 4.

As discussed above, with the reduction in the amount of product to be mined, the annual amount of aggregate would be reduced, by approximately 28 percent. For purposes of this analysis, it is assumed the hours of operation would be reduced to 7:30am to 5:00 pm, similar to Alternative 2. These hours of operation would be consistent with the County Code, so a variance would not be required. Reclamation activities would be identical to the Project, except that they would not occur in the Phase 3 and 4 area.

A schedule for Alternative 3 is provided in **Table 4-6.**.

TABLE 4-6
TENTATIVE SCHEDULE OF CONSTRUCTION, MINING, AND RECLAMATION ACTIONS

Actions	Begin	Completed	Excavation Total (cy)	Product Total (cy)
Project Approvals and Permitting	n/a	March 2023		
Project Construction	March 2023	December 2023		
Phase 1: Mining	January 2024	January 2037	11,305,00	8,160,000
Reclamation	February 2037	February 2042		
Phase 2: Mining	February 2037	February 2053	13,855,000	10,115,000
Reclamation	March 2053	March 2058		
Removal of Plant and Final Reclamation	May 2058	May 2058		

SOURCE: Freeman Associates, Sargent Quarry Reclamation Plan, February 2022.

The area to be disturbed would also be reduced under Alternative 3. Mining under Phases 3 and 4 and the conveyor belt would disturb approximately 80.5 acres, and the geotechnical setbacks would disturb approximately 23.46 acres if fully used. The total disturbance area potential for Phases 3 and 4, which no longer occur under Alternative 3, would be approximately 104 acres. This disturbance would not occur under Alternative 3. In addition, there would be a 15 percent reduction in mining of Phases 1 and 2, with a commensurate reduction in the area of disturbance for those two areas. Under Alternative 3, the total area to be disturbed would be approximately 276.5 acres, including the Phase 1 and 2 geotechnical setbacks, compared to 403.3 acres under the Project. This represents a reduction of approximately 127 acres, approximately 31 percent.

The maximum amount of product that would be produced would be 4,326 tons on a single day, and 1.341 million tons per year.

The number of employees for construction, operation and reclamation would be the same as for the Project.

Relationship of Alternative 3 to Project Objectives

Alternative 3 would meet all of the Project Objectives, although not to the extent the Project would. Alternative 3 would provide for a long-term source of high-quality aggregate, although less than would be available under the Project. Thus it would not achieve an important Project objective, developing a long-term source of high-quality aggregate needed for various uses in the County and other local markets, as well as the proposed Project. Like the Project, Alternative 3 would be consistent with SMARA, use rail transport to partially offset the use of haul trucks, and implement a reclamation plan that provides for slope stability, prevents erosion and establishes self-sustaining native and naturalized vegetation cover. Alternative 3 would minimize impacts on sensitive natural and cultural resources to a greater extent than the Project due to the relocation of the processing plant, the change in haul truck circulation and the reduction in the amount of mining. The objective of minimizing visual effects would be achieved to a similar degree by using a screening berm to partially obscure views of Phase 1 mining.

Environmental Analysis

Environmental Analysis Impacts Identified as Being the Same or Similar to the Project as Proposed

Biological Resources

The impact on San Francisco dusky-footed woodrat would be similar to the Project, due to the construction of a crossing of Tar Creek, where its nests have been observed (Impact 3.4-12). Mitigation Measure 3.4-12 would reduce this to a less-than-significant level for both the Project and Alternative 3.

Alternative 3 would partially reduce impacts on jurisdictional and other waters by avoiding intermittent and ephemeral drainages located in the Phase 3 mining area and the footprint of the conveyor belt and Sargent Creek (Impacts 3.4-14 and 3.4-21). Specifically, under Alternative 3, impacts on creeks, streams and drainages would be reduced by approximately 900 feet, or 13 percent compared to the Project (see Table 3.4-1). Impacts on the stock pond in the Phase 2 area, seasonal wetlands and wetland seep would be the same as the Project, because these features occur within the Phase 1 and 2 mining areas and/or other components that would be part of either Alternative 3 or the Project. As discussed above, a seasonal pond is located near the site of the relocated processing plan under Alternative 3. The existing plant site does not contain any waters. Impacts on jurisdictional and other waters would therefore be more severe under Alternative 3 due to the proximity of the relocated processing plant to a seasonal pond. Sufficient area is available to construct the plant at this location while avoiding a direct impact to the pond. However, development of a processing plant at this site could reduce inflow to the pond from surface runoff (Impacts 3.4-14 and 3.4-21). For both the Project and Alternative 3, impacts on jurisdictional and other would be reduced to a less-than-significant level with the implementation of Mitigation Measure 3.4-14.

Because Alternative 3 would reduce the impacts on creeks, streams and drainages relative to the Project, but at the same time could adversely affect the pond near the relocated processing plant, the impact on jurisdictional and other waters is, on balance, similar to the impact of the Project.

Alternative 3 would have a similar impact on those County ordinances and policies that are intended to protect biological resources (Impact 3.4-16 and 3.4-23). Heritage trees and 99 percent of coast live oak forest and woodland within the Project site are located in areas that would be disturbed under Alternative 3, primarily the Phase 1 and 2 mining and geotechnical setback areas. The reduction in the footprint of Phases 1 and 2 would occur primarily in grassland areas, so the number of trees and coast life oak forest and woodland acreage subject to disturbance would be similar to the Project. Therefore, this impact would be similar to the Project, and would be less than significant with the implementation of Mitigation Measure 3.4-16.

Hazardous Materials

Under both Alternative 3 and the Project, the permanent overburden stockpile would be located in an area that may have been subject to pesticide use in the past (Impacts 3.9-2 and 3.9-3). In addition, under Alternative 3, a 300-foot berm would be constructed in this area. This impact would be less than significant with the implementation of Mitigation Measure 3.9-2 for both the Project and Alternative 3.

Impacts Identified as Being Less Severe than the Project as Proposed

Aesthetics

Alternative 3 would be similar to Alternative 2 in many respects. Under Alternative 3, the processing plant would be relocated to about 1 mile north of the location proposed by the Project. No screening berm would be constructed adjacent to the processing plant; rather, a fence would be constructed around the perimeter of the processing plant. Unlike Alternative 2, however, a screening berm would be located close to the edge of the Phase 1 mining area. Additionally, under Alternative 3, the mining would not occur at elevations above 500 feet (msl), so that the upper levels of the mining area would remain intact.

During initial Project construction, the visual impacts of Alternative 3 would be similar to those of the Project, with the exception of the processing plant (Impacts 3.2-1 and 3.2-3). Lacking the visual barrier of a screening berm, the processing plant would be surrounded by a fence, and would be farther from U.S. 101 than its location under the Project. However, the addition of this fenced facility would result in a moderate to high visual change in views from U.S. 101 by adding a constructed feature which would be visually dominant.

As the screening berm around Phase 1 is constructed to an approximate height 35 feet (height could vary some depending on topography), the visual impacts of mining would be reduced as mining activities would be visually blocked by the screening berm. As mining progresses, the screening berm adjacent to Phase 1 would block views of mining activities and equipment that are at-grade and/or lower than the top of the berm for viewers south of the Project headed north on U.S. 101. Additionally, the overburden stockpile would screen views of mining for viewers at the northern end of the Project looking south. Views from U.S. 101 directly east of the mining area would also be partially blocked by the stockpile. The ability of the stockpile to screen views would depend on the size and shape of the stockpile, which may change over the course of mining. Additionally, by lowering the elevation of mining activities as a result of the reduced aggregate production under Alternative 3, the upper portions of hillsides would be left intact (i.e., no visual change) and the visual impact of mining on the hillside would be reduced relative to the Project.

While the overburden stockpile and the screening berm would reduce the visual impacts of mining relative to the Project, they would also be two large artificial structures that would alter the visual characteristics of the viewshed. Therefore, Mitigation Measure 3.2-1, as revised below, would be required to reduce visual impacts.

> **Mitigation Measure 3.2-1(a):** Once constructed, the Applicant shall contour the screening berm <u>and the northern and eastern edges of the overburden stockpile</u> to

resemble surrounding land features, to the extent possible, and shall plant fast-growing native vegetation. ~~The screening berm shall either be extended around the northern portion of the processing plant, or fencing and vegetation shall be used to further screen views of the processing plant from southbound traffic on U.S. 101. Native vegetation and/or trees shall be planted around the northern portion of the processing plant to further screen views of the processing plant from viewpoints on southbound U.S. 101 that would not be blocked by the screening berm.~~ The proposed final design for screening shall be reviewed by the County prior to construction in order to ensure that views of the processing plant and other mining areas are screened to the extent possible by a combination of the screening berm, fencing of the processing plant, and vegetation in order to achieve a natural appearance, to the extent possible.

The screening berm and overburden stockpile would reduce visual impacts relative to the Project as they would screen mining activities without the placement of a berm adjacent to U.S. 101. As the stockpile and Alternative 3 screening berm would be located farther away from U.S. 101 than the Project screening berm, they would not be as visually dominant in the foreground views from U.S. 101 and would appear to be visually incorporated into the viewshed as compared to the screening berm in the Project. While this screening would reduce the visual contrast created by the mining equipment, and quarries, the screening berm and overburden stockpile would continue to block views of the Sargent Hills which are an important visual resource. After reclamation, the screening berm and stockpile would be removed and/or the areas recontoured and revegetated to create a more natural appearance. Nonetheless, the topography within the viewshed would be permanently changed due to mining activities. There is no additional feasible mitigation that could further reduce these visual impacts. Therefore, the visual impacts of Alternative 3 would be significant and unavoidable, although less severe than those of the Project.

Air Quality

Alternative 3 would generate air emissions similar to the Project, but at a reduced amount due to the elimination of Phases 3 and 4 and reduction in mining in Phases 1 and 2. Project emissions are estimated to exceed NOx, PM2.5, and PM10 standards on a daily basis and NOx and PM10 on an annual basis (see Table 3.3-6 and Impacts 3.3-1, 3.3-2, and 3.3-4). Under Alternative 3, the amount of aggregate mined and processed on a daily and annual average would be reduced by approximately 28 percent. Alternative 3 would also reduce the amount of fugitive dust generated by construction due to the elimination of the conveyor belt and access road to Phases 3 and 4.

VMT would be reduced as well under Alternative 3 by approximately 16.5 percent, taking into account both the reduction in the number of haul trips and the increased trip length (for offsite travel) (see **Transportation**, below). The reduction in offsite VMT and mining activities would substantially reduce all emissions, but NOx and PM10 emissions would continue to exceed the thresholds (under the Project, NOx emissions exceed the threshold by 53 percent and PM10 emissions by over 900 percent). The combined reductions in emissions would likely reduce PM2.5 emissions below the identified threshold. Project daily PM2.5 emissions are estimated to be 62.2 pounds per day (see Table 3.3-6 in Section 3.3, Air Quality). The primary source of PM2.5 is haul truck travel on onsite unpaved roads. Assuming a 28 percent reduction in onsite haul truck activity, PM2.5 emissions would be reduced to approximately 48 pounds per day, which would be below the threshold of 54 pounds per day. Mitigation Measure 3.3-2 would still be required to reduce the amount of daily average NOx and annual PM10 to below the significance thresholds. However, it is anticipated that average daily emissions of PM10 would remain above the threshold, because mitigated Project emissions of PM10 would exceed the threshold by 30 percent. For these reasons, emissions of criteria air pollutants would be substantially reduced under Alternative 3, and the impact would remain significant and unavoidable, but would be less severe.

Biological Resources

Alternative 3 would reduce impacts on most special-status species and their habitat due to the elimination of Phases 3 and 4 and the reduction in the footprint of Phases 1 and 2, the latter of which would be composed primarily of California annual grassland. Based on the acreages shown by phase in Table 3.4-1 in Section 3.4, Biological Resources, Alternative 3 would disturb approximately 211 acres of annual grasslands, compared to 337 acres under the Project, an approximately 37 percent reduction. Alternative 3 would result in the loss of 10.87 acres of mixed riparian habitat, compared to 11.41 acres under the Project, an approximately 5 percent reduction. Impacts associated with other habitat types would be similar to the Project.

The Project site provides suitable habitat for 11 special-status plant species. Under Alternative 3, the plant habitat that could be lost to ground disturbance would be reduced due to the elimination of Phases 3 and 4, the reduction in the mining footprint in Phases 1 and 2, and the conveyor belt connecting these areas to the processing plant under the Project (Impacts 3.4-1 and 3.4-17). Similarly, Alternative 3 would reduce the disturbance of habitat for special-status wildlife species, including burrowing owls (Impact 3.4-7); tricolored black birds (Impact 3.4-8); raptors and migratory birds (Impact 3.4-9); mountain lion (Impact 3.4-11); and badgers (Impact 3.4-13) and cumulative impacts on these terrestrial species (Impact 3.4-20). Mitigation Measures 3.4-1, 3.4-4(a) through (c), 3.4-5(c), 3.4-7, 3.4-8, 3.4-9, 3.4-13 and 3.4-15 would be required to reduce impacts on these species and their habitat to a less-than-significant level; nevertheless, the impacts would be less severe under Alternative 3.

Because Alternative 3 would not require a crossing over Sargent Creek, the impact on potential special-status fish habitat would be reduced (Impacts 3.4-3 and 3.4-19). The reduction in disturbance area would also reduce the potential for erosion and contaminants to degrade water quality, lessening the impact on habitat for fish. Mitigation Measure 3.4-3 would ensure that this impact would be less than significant for both the Project and Alternative 3. Like the Project, the design of the Tar Creek bridge would benefit fish under Alternative 3, because the bridge would span the creek so that traffic no longer drives through the creek bed.

Alternative 3 would reduce the impact on California red-legged frog (CRLF) (Impact 3.4-4) by eliminating the potential for breeding ponds to be created in the Phase 3 and Phase 4 areas; by eliminating changes in the vicinity of the pond located south of Phase 3; and by reducing the loss of uplands and riparian habitat due to the elimination of Phases 3 and 4 and the associated conveyor belt. Mitigation Measures 3.4-4 and 3.4-5 would still be required to reduce impacts on these species and their habitat to a less-than-significant level; nevertheless, the impact would be less severe under Alternative 3.

Western pond turtle, which has been documented in a pond 1,100 feet south of the processing plant site, also could take advantage of ponds created within quarries, the creeks, and uplands, and therefore be vulnerable to harm during construction and operation (Impact 3.4-6). Alternative 3 would reduce the potential for harm of this species by reducing the number of quarries, the crossing of Sargent Creek and the amount of acreage that would be disturbed. Mitigation Measures 3.4-3, and 3.4-4(a) and (b) would reduce impacts on these species and their habitat to a less-than-significant level for both the Project and Alternative 3, but the impact would be less severe under Alternative 3 than for the Project.

Alternative 3 would reduce the loss of habitat for two special status bat species have the potential to occur within the Project site--western red bat and pallid bat (Impact 3.4-10) by reducing the amount of annual grassland that is disturbed by approximately 37 percent (from 337 acres to 228 acres and the amount of mixed riparian woodland and forest by 0.54 acres, or about 5 percent (see Table 3.4-1). Mitigation Measure 3.4-10 would still be required to reduce impacts on these species and their habitat to a less-than-significant level under Alternative 3, but the impact would be less severe than under the Project.

Under the Project, the only significant and unavoidable impact on biological resources would be due to impediments to wildlife movement between important U.S. 101 undercrossings (particularly the Tick Creek, Tar Creek/UPRR, and Pajaro River undercrossings) (Impacts 3.4-15 and 3.4-22). In particular, the proximity of the processing plant, the rail spur and Project traffic to the Tar Creek undercrossing could interfere with wildlife movement. Under Alternative 3, the processing plant would be located approximately 0.85 mile from the Tar Creek undercrossing of U.S. 101, so it would substantially reduce the impediment to wildlife movement at Tar Creek and Pajaro River undercrossings. Alternative 3 would construct a 300-foot long berm, which could interfere with some wildlife movement across the project site, but for the most part the berm would abut the Phase 1 mining pit, which would itself deter wildlife movement.

Alternative 3 would include approximately 1 mile of the conveyor belt to connect the processing plant to the Phase 1 and 2 mining areas. Most of the conveyor belt would be located along Old Monterey Road, so it would be in an area where there is already some disturbance. The rail spur would still be needed, and there would be some infrastructure associated with loading rail cars, but that would be farther from the undercrossing than the majority of the plant site. The Alternative 3 site would be 0.2 mile from the Tick Creek undercrossing, so it would likely deter some wildlife from using that culvert. However, the Tick Creek undercrossing is not nearly as heavily used by mammals, particularly large mammals, as Tar Creek and the Pajaro River.

Under Alternative 3, the Tar Creek bridge would be relocated upstream, farther from the U.S. 101 undercrossing. Because heavy truck traffic would not be allowed south of the processing plant under Alternative 3, there would be less vehicle traffic using this bridge, and in the vicinity of undercrossing. There would also be some reduction in the severity of the impact due to the elimination of the Phase 3 and 4 quarries and the 1.6-mile-long conveyor belt to Phases 3 and 4, which could also deter wildlife from moving across the Project site.

While Alternative 3 would substantially reduce impacts on wildlife movement, the impact would still be significant due to the conveyor belts which would extend across the entire western side of both the Tar Creek and Pajaro River crossing locations (i.e., wildlife moving to and from each undercrossing would have to navigate that belt at some point). Therefore, Mitigation Measure 3.4-15 would be required of Alternative 3, but the impact would remain significant and unavoidable.

Cultural Resources

There are two known archaeological sites (CA-SCL-578/H and CA-SLC-577/H), one of which may contain human remains, that would be affected by truck traffic using Old Monterey Road and the road that would be used to access northbound U.S. 101(Impacts 3.5-1, 3.5-3, 3.5-6 and 3.5-8). Under Alternative 3, Old Monterey Road would be rerouted to avoid archaeological site CA-SCL-578/H (Impacts 3.5-1, 3.5-2, 3.5-3, 3.5-6 and 3.5-8). In addition, heavy truck traffic would not be able to use the road and underpass to access U.S. 101, further avoiding this archaeological site. Therefore, Alternative 3 would not have an adverse impact on known resources associated with CA-SCL-578/H. Further, the number of truck trips on these roads would be reduced under Alternative 3, so there would be less wear and tear on the road. The northern segment of Old Monterey Road would still be used to access the processing plant, so the impact on CA-SCL-577/H would be substantially lessened but still significant. While this would create less potential for damage to the archaeological sites, the implementation of Mitigation Measures 3.5-1 and 3.5-3b still would be needed to reduce the impact to a less-than-significant level.

Alternative 3 would disturb approximately 127 fewer acres than the Project, most of which are considered highly sensitive for archaeological resources (Impacts 3.5-2 and 3.5-7), by eliminating Phases 3 and 4. Mitigation Measure 3.5-1 would still be necessary to reduce the potential for damage to resources in the Phase 1 and 2 mining areas, the processing plant, the bridge and the roads. As with the Project, these impacts would be less than significant with mitigation incorporated.

Alternative 3 would substantially reduce the impacts on Tribal Cultural Resources (Impacts 3.5-4, 3.5-5 and 3.5-9). As discussed above, the impacts on CA-SCL-578/H and CA-SLC-577/H, which are individually Tribal Cultural Resources, would be reduced due to the relocation of the processing plant and circulation changes, and the reduction in truck traffic (Impact 3.5-4). The impact on the Betevel Bluff would be entirely eliminated because it would be undisturbed. Therefore, Impact 3.5-4 would be less than significant with implementation of Mitigation Measure 3.5-1 under Alternative 3, compared to the significant and unavoidable impact (even with mitigation) that would occur under the Project. The impact on the Juristac Tribal Cultural Landscape (JTCL) would be less severe under Alternative 3 due to the reduction in acreage that would be disturbed and the avoidance of Betevel Bluff (Impact 3.5-4). Nonetheless, the alteration of the JTCL, including impacts related to topography or vegetation would be substantial, and the impacts would therefore be significant., Impacts 3.5-5 and 3.5-9 would be significant and unavoidable, even with implementation of Mitigation Measure 3.5-5.

Geology, Soils, and Paleontological Resources

Under the Alternative 3, approximately 127 fewer acres would be disturbed, and fewer mine bench cuts would be made. The potential for slope-stability impacts to occur would be eliminated in the Phase 3 and 4 area (Impact 3.7-2). Although this impact would be reduced, Mitigation Measure 3.7-2 would still be required to address potential slope instability at Phases 1 and 2 to a less-than-significant level.

Significant-and-unavoidable paleontological impacts also would be reduced due to a smaller area of highly sensitive geological layers being disturbed; however, this impact would remain significant and unavoidable due to excavation at Phases 1 and 2 (Impacts 3.7-5 and 3.7-6), even with implementation of Mitigation Measure 3.7-5.

Greenhouse Gas Emissions

Under Alternative 3, the area that would be disturbed would be reduced by approximately 31 percent and the amount of excavation would be reduced by approximately 28 percent. Therefore, this alternative would generate fewer overall GHG emissions compared to emissions that would be generated under the Project (see Impacts 3.8-1 and 3.8-2). VMT would also be reduced by about 21 percent (see transportation discussion below). Nonetheless, Alternative 3 would generate substantial GHG emissions, a significant impact, so the impact would require Mitigation Measure 3.8-1 to be reduced to a less-than-significant level.

Hydrology and Water Quality

The area that would be disturbed during construction would be reduced under Alternative 3 due to the elimination of the conveyor belt to the Phase 3 and 4 mining site (Impacts 3.10-1 and 3.10-10). Consequently, the potential for degradation of water quality due to soil erosion during construction would be reduced. As with the Project, this impact would be a less-than-significant impact with Mitigation Measure 3.4-4 in Section 3.4, Biological Resources, which addresses water quality.

Transportation (move to Similar or More)?

Under Alternative 3, there would be an approximately 21 percent reduction in vehicle miles traveled commensurate with the reduction in the amount of aggregate being processed and sold (Impacts 3.13-2 and 3.13-5). While there would be a substantial reduction in the number of vehicle trips, approximately 25 percent, the prohibition on the use of the undercrossing and access to the northbound onramp near the Project site would increase the length each trip of approximately 6.5 miles, which would partially offset the reduction in trips with respect to VMT Therefore, this significant and unavoidable impact would be more less under Alternative 3 then under the Project .

Under Alternative 3, there would be no improvements to the northbound on-ramp to U.S. 101. Therefore, the potential for conflicts between on-ramp construction and highway traffic, as well as potential interference with emergency vehicles, would be reduced (Impacts 3.13-3, 3.13-4 and 3.13-6). However, such conflicts could occur due to delivery of wide loads and other construction activities that would occur under both Alternative 3 and the Project. In both cases, these impacts would be less than significant with implementation of Mitigation Measure 3.13-3.

Impacts Identified as Being More Severe than the Project as Proposed

Biological Resources

Alternative 3 would partially reduce the impact on California tiger salamander (CTS) (Impact 3.4-5) by eliminating the potential for breeding ponds to be created in the Phase 3 and Phase 4 areas; by eliminating changes in the vicinity of the pond located south of Phase 3; and by reducing the loss of uplands and riparian habitat due to the elimination of Phases 3 and 4 and the associated conveyor belt. At the same time, the processing plant would be located immediately adjacent to a seasonal pond that is used by CTS for breeding. Even if the pond itself is not directly affected, locating the processing plant in this location could reduce runoff that supports ponding in that feature. The processing plant would also occupy upland dispersal and refugial habitat used by salamanders, which could impede the movement of salamanders to and from that pond). Mitigation Measures 3.4-4 and 3.4-5 would still be required to reduce significant impacts on these species and their habitat to a less-than-significant level; nevertheless, the impact would be more under Alternative 3.

4.6 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) states than an EIR shall identify an environmentally superior alternative. If the environmentally superior alternative is the “No Project” alternative, then the EIR also shall identify an environmentally superior alternative among the other alternatives.

As shown in **Table 4-7**, in almost all cases, Alternatives 1 through 3 would reduce or avoid most of the significant impacts of the Project. Alternative 1, the No Project alternative, would avoid all Project impacts, so it would be the environmentally superior alternative. However, this alternative would not meet any project objectives.

The environmentally superior alternative among the remaining alternatives would be Alternative 3. As shown in **Table 4-7** and discussed in Section 4.5.3, Alternative 3 would avoid the significant and unavoidable impact on the Betevel Bluff Tribal Cultural Resource, and would further lessen the significant and unavoidable impacts on the Juristac Landscape Tribal Cultural Resource and paleontological resources. Alternative 3 would also reduce the significant and unavoidable impact on wildlife movement (although the impact would remain significant and unavoidable), and reduce the significant impact but mitigable impact on cultural resources by avoiding site CA-SCL-577/H. In addition, Alternative 3 would substantially reduce impacts of air pollutant and GHG emissions, changes in visual character, loss of sensitive habitat, impacts on most special-status species, potential for slope instability and degradation of water quality.

TABLE 4-7
COMPARISON OF ALTERNATIVES TO THE PROJECT (SIGNIFICANT IMPACTS)

Environmental Impact	Project	Alternative 1	Alternative 2	Alternative 3
Aesthetics				
Impact 3.2-1: The Project would alter the visual character of the Project site or scenic resource visible from U.S. 101, a County-designated scenic highway.	SU/M	NI	SU/M>	SU/M<
Impact 3.2-3: The Project would contribute to cumulative changes in visual character of public views from U.S. 101, a County-designated scenic highway.	SU/M	NI	SU/M>	SU/M<
Air Quality				
Impact 3.3-1: The Project would affect implementation of the applicable air quality plans.	SU/M	NI	SU/M<	SU/M<
Impact 3.3-2: The Project would emit criteria air pollutants–ozone precursors (NOx and ROG), PM2.5, and PM10, for which the region is in nonattainment status.	SU/M	NI	SU/M<	SU/M<
Impact 3.3-5: The Project would contribute nonattainment pollutants (ozone precursors, PM2.5 and PM10) to cumulative increases in air pollutants.	SU/M	NI	SU/M<	SU/M<
Biological Resources				
Impact 3.4-1: Project activities would result in adverse effects on special-status plant species.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-3: Project activities would result in adverse effects on special-status fish and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-4: Project activities would result in adverse effects on California red-legged frogs and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-5: Project activities would result in adverse effects on California tiger salamanders (CTS) and their habitat.	LTS/M	NI	LTS/M>	LTS/M>
Impact 3.4-6: Project activities would result in adverse effects on western pond turtles and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-7: Project activities would result in adverse effects on burrowing owls and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-8: Project activities would result in adverse effects on tricolored blackbirds and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-9: Project activities would result in adverse effects on other special-status and protected birds and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-10: Project activities would result in adverse effects on special-status bats.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-11: Project activities would result in adverse effects on mountain lions and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-12: Project activities would result in adverse effects on San Francisco dusky-footed woodrats and their habitat.	LTS/M	NI	LTS/M=	LTS/M=
Impact 3.4-13: Project activities would result in adverse effects on American badgers and their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-14: Project activities would result in substantial adverse effects on jurisdictional wetlands, other waters, and riparian habitats.	LTS/M	NI	LTS/M=	LTS/M=
Impact 3.4-15: Implementation of the project would interfere substantially with wildlife movement.	SU/M	NI	SU/M<	SU/M<
Impact 3.4-16 Project activities would conflict with County ordinances and policies intended to protect biological resources.	LTS/M	NI	LTS/M=	LTS/M=

TABLE 4-7 (CONTINUED)
COMPARISON OF ALTERNATIVES TO THE PROJECT (SIGNIFICANT IMPACTS)

Environmental Impact	Project	Alternative 1	Alternative 2	Alternative 3
Biological Resources (cont.)				
Impact 3.4-17: The Project activities could contribute to the cumulative loss of special-status plant species.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-19: Project activities could contribute to a cumulative degradation of habitat for special-status fish.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-20: Project activities could contribute to cumulative harm to protected terrestrial species and loss of their habitat.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.4-21: The Project activities could contribute to the cumulative loss of jurisdictional wetlands, other waters, and riparian habitats.	LTS/M	NI	LTS/M=	LTS/M=
Impact 3.4-22: The Project activities could contribute to the cumulative impairment of wildlife crossings.	SU/M	NI	SU/M<	SU/M<
Impact 3.4-23: The Project activities could contribute to the cumulative loss of oaks and oak woodlands.	LTS/MM	NI	LTS/M=	LTS/M=
Cultural and Tribal Resources				
Impact 3.5-1: The Project would cause a substantial adverse change in the significance of known historical or archaeological resources.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-2: Implementation of the Project could damage unrecorded subsurface prehistoric and historic archaeological resources.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-3: The Project could disturb any human remains, including those interred outside of dedicated cemeteries.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-4: The Project would cause a substantial adverse change in the significance of tribal cultural resources within the proposed area of development.	SU/M	NI	LTS/M<	LTS/M<
Impact 3.5-5: The Project would cause a substantial adverse change in the significance of the Juristac Tribal Cultural Landscape	SU/M	NI	SU/M<	SU/M<
Impact 3.5-6: The Project could contribute to cumulative adverse changes in known historical or archaeological resources.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-7: The Project could contribute to cumulative adverse changes in unrecorded subsurface prehistoric and historic archaeological resources.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-8: The Project could contribute to cumulative disturbance of human remains, including those interred outside of dedicated cemeteries	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.5-9: The Project could contribute to cumulative adverse changes in the significance of tribal cultural resources.	SU/M	NI	SU/M<	SU/M<
Geology, Soils, and Paleontological Resources				
Impact 3.7-2: Excavation of quarry pits and reclamation would increase the potential for slope instability and slope failure.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.7-5: Project excavation and grading would adversely affect paleontological resources.	SU/M	NI	SU/M<	SU/M<
Impact 3.7-6: The Project would contribute to the cumulative loss of paleontological resources.	SU/M	NI	SU/M<	SU/M<
Greenhouse Gas Emissions				
Impact 3.8-1: The Project would create greenhouse gas emissions directly or indirectly contributing to global climate change.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.8-2: The Project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.	LTS/M	NI	LTS/M<	LTS/M<

TABLE 4-7 (CONTINUED)
COMPARISON OF ALTERNATIVES TO THE PROJECT (SIGNIFICANT IMPACTS)

Environmental Impact	Project	Alternative 1	Alternative 2	Alternative 3
Hazards and Hazardous Materials				
Impact 3.9-2: The Project could create a hazard to the public or the environment through accidental release of existing soil contaminants, such as historic pesticide residues, into the environment.	LTS/M	NI	LTS/M=	LTS/M=
Impact 3.9-3: The Project would contribute to the cumulative increases in the risk of exposure to hazardous materials.	LTS/M	NI	LTS/M=	LTS/M=
Hydrology and Water Quality				
Impact 3.10-1: Project construction grading and other activities would substantially degrade surface or groundwater quality.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.10-10: The Project would not contribute to cumulative degradation of water quality.	LTS/M	NI	LTS/M <	LTS/M <
Transportation				
Impact 3.13-2 The Project would generate additional substantial vehicle miles traveled.	SU/M	NI	SU/M<	SU/M<
Impact 3.13-3: Project construction could increase roadway hazards due to the presence of large construction trucks, temporary lane closures and detours.	LTS/M	NI	LTS/M<	LTS/M<
Impact 3.13-4: The Project could result in inadequate emergency access.	LTS/M	NI	LTS<	LTS/M<
Impact 3.13-5: The Project would contribute to cumulative increases in vehicle miles traveled.	SU/M	NI	SU/M<	SU/M<
Impact 3.13-6: The Project would contribute to significant cumulative increases in roadway hazards and/or interference with emergency access.	LTS/M	NI	LTS/M<	LTS/M<

NOTES:

LTS/MM=Less than Significant with Mitigation
NI=No Impact
SU=Significant and Unavoidable
SU/M=Significant and Unavoidable with Mitigation

= Impact would be the same or similar to the Project impact
> Impact would be more severe than the Project impact
< Impact would be less severe than the Project impact

4.7 References

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CHAPTER 5
Other CEQA Considerations

5.1 Growth Inducement

CEQA Guidelines Section 15126.2(d) states that an EIR must discuss "the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Growth can be induced in a number of ways, including directly through implementation of projects that create new housing and employment opportunities, and indirectly through elimination of obstacles to growth and stimulation of economic activity within a region. As discussed in Chapter 2, *Project Description*, the Project would be implemented over an approximately 35-year period, including initial construction and final reclamation. A total of up to 15 people would be employed during initial construction and Project operation, including mining, product processing, sales, and those aspects of reclamation that involve earth moving. Up to two additional employees would be employed intermittently for revegetation and monitoring. Given the relatively small size of the staff, these employees would likely come from the existing employment pool in Santa Clara and San Benito Counties, with workers commuting to the site rather than moving. As such, the additional employees would not directly induce population growth in the vicinity of the Project site.

Furthermore, the Project would not directly involve construction of new housing, businesses, or infrastructure. Ultimately, the Project site would be returned to its current use as grazing land following reclamation, and the number of employees would be reduced accordingly. For these reasons, the Project would not induce substantial numbers of people or businesses to move into the Project area.

The Project could remove one barrier to growth in general by meeting the demand for aggregate products in the region. However, the availability of aggregate is only one of many potential barriers to growth. Numerous factors control where and to what extent growth occurs. By the time there is a demand for aggregate products, the projects creating the demand are ready to be built and have already been though an independent environmental and/or planning review process. Therefore, aggregate extraction would accommodate growth to the extent that is necessary for approved growth to occur, but would not indirectly foster economic or population growth.

For the above reasons, the Project would not directly or indirectly foster economic or population growth, and the project would not be growth-inducing.

5.2 Significant and Unavoidable Impacts

Section 15126.2(a) of the CEQA Guidelines requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. All impacts could be reduced with the implementation of mitigation measures to a less-than-significant level.

1. **Aesthetics**: The Project would have a significant and unavoidable impact, both at the Project-specific level and cumulatively, with regard to its effect on existing visual character or quality of public views of the site and its surroundings from U.S. 101, a County-designated scenic highway (Impact 3.2-1). Mitigation Measure 3.2-1 would lessen the severity of these impacts but not below the level of significance.). This significant unavoidable impact would also be cumulatively significant and unavoidable (Impact 3.2-3).

2. **Air Quality**: The Project would have a significant and unavoidable impact with regard to its effect on BAAQMD NOx thresholds and emissions of NOx, ROG, PM 2.5, and PM 10 for which the region is in nonattainment status. Mitigation Measures 3.3-2a and 3.3-2b would reduce NOx thresholds but emissions of NOx would not be reduced below significance thresholds for project-specific or cumulative impacts (Impacts 3.3-1, 3.3-2 and 3.3-5).

3. **Biological Resources**: The Project would have a significant and unavoidable impact with regard to the Project's interference with wildlife movement. Mitigation Measure 3.4-15 would reduce this impact but not below the thresholds of significance (Impact 3.4-15). This significant unavoidable impact would also be cumulatively significant and unavoidable (Impact 3.4-22).

4. **Cultural and Tribal Cultural Resources**: The Project would have a significant and unavoidable impact both at the Project-specific level and cumulatively with regard to changes in the significance of tribal cultural resources within the proposed area of development, and the Juristac Tribal Cultural Landscape (Impacts 3.5-4 and 3.5-5). Mitigation Measures 3.5-1,3.5-3b, 3.5-4b and 3.5-b would reduce the severity of these impacts, but not to a less-than-significant level.

5. **Geology, Soils, and Paleontology**: The Project would have a significant and unavoidable impact with regard to the Project's potential to destroy paleontological resources important to Santa Clara County (Impact 3.7-5). Mitigation Measure 3.7-5 would not reduce impacts to a level of insignificance. This impact would also be considered cumulatively significant and unavoidable (Impact 3.7-6).

6. **Transportation**: The Project would have a significant and unavoidable impact with regard to the Project's generation of additional Vehicle Miles Traveled (VMT), and no feasible mitigation is identified to reduce the impact (Impact 3.13-2). This impact would also be cumulatively significant and unavoidable (Impact 3.13-5).

5.3 Irreversible Impacts

Section 15126.2(c) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continuing phases of the project. Irreversible impacts also can result from damage caused by environmental accidents associated with a project. Irretrievable commitments of resources are evaluated to ensure that such consumption is justified.

Section 15126.2(d) of the CEQA Guidelines requires an EIR to consider whether a proposed project, if implemented, would result in significant irreversible environmental changes. Such changes are likely to occur for example, following the dedication of a large commitment of nonrenewable resources because "a large commitment of such resources makes removal or nonuse thereafter unlikely." Secondary impacts (such as highway improvements, which provide access to a previously inaccessible area) generally commit future generations to similar uses.

Energy would be consumed during both the construction and operational phases of the Project. The construction phase would require the use of nonrenewable resources during construction, including fossil fuels, concrete, metals, plastics, and glass. The operational phase would consume energy in the form of electricity for multiple purposes, including building heating and cooling, lighting, and use of appliances and electronics, such as conveyor belts and processing equipment. Energy, in the form of fossil fuels, would be used to fuel vehicles traveling to and from the Project site and for mining operations. Energy consumption also would occur to implement reclamation activities. The use of energy during all phases of the Project would be irreversible but would not be significant in relation to overall sources and supplies, as described in Section 3.6, *Energy*.

Accidents, such as the release of hazardous materials, could trigger irreversible environmental damage. However, Project construction would result in the transport of hazardous materials including fluids for vehicle operation and maintenance such as fuels, oils, liquid polymer, battery acid, coolant, and cleaner, off-site by an approved carrier in accordance with state and local regulations. See Section 2.4.7, *On-Site Hazardous Material Use and Storage*, for a range of hazardous materials that could be handled in the Project site. Considering the types and minimal quantities of hazardous materials that are and would continue to be used at the site, and emergency response plans and procedures that would be implemented as a part of the Project, accidental release of substantial quantities is unlikely. State and federal regulations and safety requirements, as described in the regulatory setting in Section 3.9, *Hazards and Hazardous Materials*, would ensure that public health and safety risks are maintained at acceptable levels, so that significant irreversible changes from accidental releases are unlikely.

Operation of the Project would also result in the irreversible extraction and consumption of aggregate material that is mined from the Project site and ultimately sold. As described in Table 2-2, *Estimated Mining and Excavation Quantities*, in Chapter 2, the Project would result in the sale of up to 25,305,000 cubic yards of product, consisting of a combination of sand and gravel.

Upon completion of mining, the site would be returned to its previous use (cattle grazing). Mining activities would permanently change the topography and hydrology of the mining area.

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CHAPTER 6
Report Preparation

6.1 Lead Agency

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Robert Salisbury, Senior Planner
Xue Ling, Associate Planner
David Rader, Former Senior Planner

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Jessica O'Dell	Project Coordinator, Aesthetics
Brandon Carroll	Paleontological Resources
Dave Davis	Aesthetics
Matt Fagundes	Air Quality, Energy, Greenhouse Gas Emissions
Karen Lancelle	Utilities and Service Systems
Jill Feyk-Miney	Energy
Michael Newland	Tribal Cultural Resources
Chris Sanchez	Noise
Russell S. Shapiro, Ph.D.	Paleontological Resources
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