2.2 Air Quality

This section analyzes the existing air quality conditions in the project area, identifies applicable regulations, and determines potential short- and long-term air quality impacts associated with implementation of the proposed project. The methods of analysis for short-term construction, long-term regional (operational), local mobile source, odor, and toxic air contaminant (TAC) emissions are consistent with the recommendations of the County. Design considerations and mitigation measures are recommended, as necessary, to reduce significant air quality impacts. The analysis in this section is based on the Air Quality Technical Report that was prepared for the proposed project (ESA 2018), which is included as Appendix F of this EIR.

2.2.1 Existing Conditions

2.2.1.1 Climate and Meteorology

The project is located within unincorporated San Diego County, which is in the San Diego Air Basin (SDAB). The topography in the San Diego region varies greatly, from beaches in the west to mountains and desert in the east, defined by mesa tops intersected by canyon areas. The topography in the San Diego region, along with local meteorology, influences the dispersal and movement of pollutants in the basin. The mountains to the east prohibit dispersal of pollutants beyond them and help trap the pollutants in inversion layers.

The weather of the San Diego region is influenced by the Pacific Ocean and its semi-permanent high-pressure systems that result in dry, warm summers and mild, occasionally wet winters. The average temperature ranges from the mid-40s to the high 90s. Most of the county's precipitation falls from November to April, with infrequent (approximately 10 percent) precipitation during the summer. The average seasonal precipitation along the coast is approximately 10 inches; the amount increases with elevation as moist air is lifted over the mountains.

The interaction of ocean, land, and the Pacific High Pressure Zone maintains clear skies for much of the year and drives the prevailing winds. Local terrain is often the dominant factor inland, and winds in inland mountainous areas tend to blow through the valleys during the day and down the hills and valleys at night.

In conjunction with the two characteristic onshore/offshore wind patterns, there are two types of temperature inversions (reversals of the normal decrease of temperature with height) that occur within the region affecting atmospheric dispersive capability and acting to degrade local air quality. In the summer, an inversion at about 1,100 to 2,500 feet is formed over the entire coastal plain when the warm air mass over land is undercut by a shallow layer of cool marine air flowing offshore. The prevailing sunny days in this region further exacerbate

the smog problem by inducing additional adverse photochemical reactions. During the winter, a nightly shallow inversion layer (usually at about 800 feet) forms between the cooled air at the ground and the warmer air above, which can trap vehicular pollutants. The days of highest CO concentrations occur during the winter months.

The predominant onshore/offshore wind pattern is sometimes interrupted by so-called Santa Ana conditions, when high pressure over the Nevada-Utah area overcomes the prevailing westerly winds, sending strong, steady, hot and dry winds from the east over the mountains and out to sea. Strong Santa Ana winds tend to blow pollutants out over the ocean, producing clear days. However, at the onset or breakdown of these conditions or if the Santa Ana is weak, prevailing northwesterly winds reassert themselves and send a cloud of contamination from the Los Angeles Basin ashore in the SDAB.

Based on past climate records from the Western Regional Climate Center (WRCC) monitoring stations located in Lakeside (Lakeside 2E, California 044710 and 044711), the average precipitation in the area ranges from 12.84 to 15.58 inches annually, occurring primarily from December through March (WRCC 2015).

2.2.1.2 Background Air Quality

Regional Air Quality

The SDAB lies in the southwest corner of California and comprises the entire San Diego region. However, population and emissions are concentrated mainly in the western portion of the county. The air basin covers 4,200 square miles, includes about 8 percent of the state's population, and produces about 5 percent of the state's criteria pollutant emissions (CARB, 2013). The City of San Diego covers approximately 330 square miles, or 8 percent, of the SDAB. Air quality in the region is monitored by the SDAPCD.

Air quality in the SDAB is impacted not only by local emissions, but also by pollutants transported from other areas, in particular, ozone (O_3) and O_3 precursor emissions transported from the South Coast Air Basin and the Republic of Mexico. Although the impact of transport is particularly important on days with high O_3 concentrations, transported pollutants and emissions cannot be blamed entirely for the O_3 problem in the San Diego area. Studies show that emissions from the SDAB are sufficient, on their own, to cause O_3 violations (SDAPCD 2007)

As in other parts of California, overall air quality in the SDAB has improved, despite high growth rates, in part due to the benefits of cleaner technologies. In 2002, motor vehicles and other mobile sources were determined to emit 76 percent of the harmful pollutants that degrade the air quality of the San Diego

region, and industrial sources emitted 14 percent (SDAPCD 2002). As of 2013 San Diego County's air quality is the best it has been since the mid-1950s when air pollutant measuring began. Even so, pollutants from mobile sources still make up approximately 75 percent of the total pollutant emissions within the region (SDAPCD 2013).

Significant progress has been realized in the region's air quality since the early 1970s when San Diego Association of Governments (SANDAG) and SDAPCD began working together to reduce regional emissions. SANDAG is responsible for developing a "Transportation Control Measures (TCM) Plan" to help achieve air quality objectives for the region, which is developed with input from the City of San Diego. The SDAPCD adopts the TCM Plan as part of the Regional Air Quality Strategy (RAQS), which is updated on a triennial basis and outlines measures for achieving state and national air quality standards. The SDAPCD is also responsible for stationary source tactics to reduce air pollution resulting from industry.

The California Air Resources Board (CARB) and the SDAPCD collect ambient air quality data locally through a network of air monitoring stations. These data are summarized annually and are published in the CARB's California Air Quality Data Summaries. Air quality monitoring data for the El Cajon- Floyd Smith Drive station is shown in Table 2.2-1, which identifies the most recent available data for federal and state ambient air quality standards for the relevant air pollutants between 2014 and 2016.

While the data gathered at these monitoring stations may not necessarily reflect the unique air quality environment of all areas of the county, nor the proximity of site-specific stationary and street sources, they do present the nearest available benchmark and the pollutants of greatest concern in the region.

Both CARB and the United States Environmental Protection Agency (USEPA) use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment. In summary, the SDAB is non-attainment for O_3 (state and federal), respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less (PM_{10}) (state), and fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less ($PM_{2.5}$) (state and federal) standards. The current attainment status for the SDAB is provided in Table 2.2-2.

Emissions of nitrogen oxides (NO_X) and reactive organic gases (ROG) in the SDAB have been following statewide trends for each pollutant since 2000. These trends are largely due to motor vehicle controls and reductions in evaporative emissions. Mobile sources (both on-road and other) are by far the largest contributors to NO_X, and ROG in the SDAB. Although the maximum 1-hour concentrations occasionally exceeded the ambient air quality standards in the 1980s, ambient concentrations are now well below the levels of both the state and national standards, and the SDAB is considered in attainment (SDAPCD 2013a).

The SDAB was reclassified as an attainment area for CO in 2004 and currently maintains its attainment status (SDAPCD 2013a). As of 2011, the national CO standard had been attained statewide.

The majority of the PM_{10} emissions are from area-wide sources (CARB 2013a). The concentration of PM_{10} recorded at the El Cajon station did not exceed national or state 24-hour standard between 2012 and 2014.

SDAB has been in attainment for SO_2 for several years (SDAPCD 2013a). The low level of SO_2 in the basin could be attributed to use of low-sulfur fuels in the region's electrical generators, a primary source of this pollutant in other areas of the country (SDAPCD 2007).

The SDAB is presently in attainment for lead (Pb), and the region no longer monitors for it (SDAPCD 2013a).

2.2.1.3 Sensitive Receptors

Sensitive receptors are individuals who are considered more sensitive to air pollutants than others. The reasons for greater than average sensitivity may include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Air quality regulators typically define sensitive receptors as schools (Preschool–12th Grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. For the purposes of CEQA analysis within the County, the definition of a sensitive receptor also includes residents. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

Currently, sensitive uses located in the project area include single-family residences. There are residences located north of proposed mine phase 1, approximately 100–170 feet north of Willow Road, and north of mine phases 2 and 3, approximately 110 feet north of Willow Road. There are also residences located south of mine phase 2, approximately 50 feet south of the project site. Additionally, there are residential land uses intermittently surrounding the project site to the west and east. The nearest schools to the proposed project are El Capitan High School for grades 9–12 (10410 Ashwood Street, Lakeside, California 92040), located approximately 0.5 mile southwest (approximately 1.1 miles west of the closest area of disturbance); Tierra Del Sol Middle School for grades 6–8 (9611 Petite Lane, Lakeside, California 92040), located approximately 1.1 miles southwest (approximately 1.1 miles southwest of the closest area of disturbance); Blossom Valley Elementary School for grades K–5 (9863 Oakmont Terrace, El Cajon, California 92021), located approximately 1.5 miles southeast (approximately 1.7 miles southeast of the closest area of disturbance); and ABC Wonder Years preschool and kindergarten (10815 Dollar Court, Lakeside California 92040), located approximately 0.6 mile west of the project area (approximately 1.2 miles west of the closest area of disturbance).

2.2.1.4 Regulatory Framework

Federal

Clean Air Act

The principal air quality regulatory mechanism at the federal level is the Clean Air Act (CAA), and in particular, the 1990 amendments to the CAA and the National Ambient Air Quality Standards (NAAQS) that it establishes. These standards identify the maximum ambient (background) concentration levels of criteria pollutants that are considered to be safe, with an adequate margin of safety, to protect public health and welfare.

The CAA also requires each state to prepare an air quality control plan referred to as a state implementation plan (SIP). The CAA Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. USEPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and to determine whether implementing the SIPs will achieve air quality goals.

The USEPA also has regulatory and enforcement jurisdiction over emission sources beyond state waters (outer continental shelf), and those that are under the exclusive authority of the federal government, such as aircraft, locomotives,

and interstate trucking. USEPA sets federal vehicle and stationary source emissions standards and provides research and guidance in air pollution programs.

Ambient Air Quality Standards

Regulation of air pollution is achieved through both federal and state ambient air quality standards and emission limits for individual sources of air pollutants. As required by the federal CAA, the USEPA has identified criteria pollutants and has established NAAQS to protect public health and welfare. NAAQS have been established for O_3, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM_{10} and $PM_{2.5}$, and Pb. These pollutants are called “criteria” air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, the USEPA has set “primary” and “secondary” maximum ambient limits for each of the criteria pollutants. Primary standards were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent damage to animals, crops, vegetation, and buildings.

The NAAQS establish the level for an air pollutant above which detrimental effects to public health or welfare may result. The NAAQS are defined as the maximum acceptable concentrations that, depending on the pollutant, may not be equaled or exceeded more than once per year or in some cases as a percentile of observations. California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (i.e., California Ambient Air Quality Standards [CAAQS]) and has adopted air quality standards for some pollutants for which there is no corresponding national standard, such as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Both the national and State ambient air quality standards for pollutants along with their associated health effects and sources are presented in Table 2.2-3.

Criteria Air Pollutants

Air quality regulations focus on O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb. These air pollutants are commonly referred to as “criteria air pollutants” since they are the most prevalent air pollutants known to be deleterious to human health, and there is extensive documentation available on their health effects.

A brief description of each criteria air pollutant, including source types and health effects, is provided in the Air Quality Technical Report (Appendix F).

State

California Air Resources Board

CARB, a department of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California by administering the SIP. Its primary responsibility lies in ensuring implementation of the 1989 amendments to the California Clean Air Act (CCAA), responding to the federal CAA requirements, and regulating emissions from motor vehicles sold in California. It also sets fuel specifications to further reduce vehicular emissions.

The amendments to the CCAA establish CAAQS, and a legal mandate to achieve these standards by the earliest practical date. These standards apply to the same criteria pollutants as the federal CAA, and also include sulfates, visibility reducing particulates, hydrogen sulfide, and vinyl chloride. They are also generally more stringent than the federal standards.

CARB is also responsible for regulations pertaining to TACs. The Air Toxics “Hot Spots” Information and Assessment Act was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. Assembly Bill (AB) 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release.

Toxic Air Contaminants

Concentrations of TACs, or in federal parlance, hazardous air pollutants (HAPs), are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

According to The California Almanac of Emissions and Air Quality (CARB 2009), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being PM from diesel-fueled engines, and crystalline silica, which are discussed below.

Diesel Particulate Matter

Diesel Particulate Matter (DPM) differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

Unlike the other TACs, no ambient monitoring data are available for DPM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of DPM. In addition to DPM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways and rail lines with diesel locomotive operations. The cancer risk from DPM, as determined by the CARB, declined from 900 persons in 1 million in 1990 to 540 persons in 1 million in 2000 (CARB 2009a). This calculated cancer risk value from ambient air exposure can be compared against the lifetime probability of being diagnosed with cancer in the United States from all causes, which is approximately 40 percent, or greater than 400,000 in 1 million, according to the National Cancer Institute (National Cancer Institute 2014).

Crystalline Silica

Crystalline silica is a basic component of soil, sand, granite, and many other minerals. Quartz, cristobalite and tridymite are the most common form of crystalline silica. In 2005, the California Office of Environmental Health Hazard Assessment (OEHHA) added a chronic reference exposure level (REL) for crystalline silica. Silica is a hazardous substance when it is inhaled, and the airborne dust particles that are formed when the material containing the silica is broken, crushed, or sawn pose potential risks. Breathing crystalline silica dust can cause silicosis, which in severe cases can be disabling, or even fatal. The respirable silica dust enters the lungs and causes the formation of scar tissue, thus reducing the lungs' ability to take in oxygen.

Sources of ambient respirable crystalline silica in California include mines, quarries, diatomaceous earth calcining plants, sand blasting, and entrained fines (e.g., PM_{10}) from surface soil. The annual statewide industrial emissions from facilities reporting under the Air Toxics Hot Spots Act in California based on the most recent inventory were estimated to be 1,007 tons of crystalline silica (CARB 2008).

Local

San Diego Air Pollution Control District

The SDAPCD is the agency responsible for protecting the public health and welfare through the administration of federal and state air quality laws and policies. Included in SDAPCD's tasks are the monitoring of air pollution, the preparation of San Diego County's portion of the SIP, and the promulgation of rules and regulations. The SIP includes strategies and tactics to be used to attain and maintain acceptable air quality in the County; this list of strategies is called the San Diego RAQS (SDAPCD 2016). The rules and regulations include procedures and requirements to control the emission of pollutants and prevent significant adverse impacts.

The following SDAPCD rules and regulations apply to new construction:

- Regulation IV: Prohibitions; Rule 51: Nuisance. Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.

- Regulation IV: Prohibitions; Rule 55: Fugitive Dust. Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site.

- Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings. Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce volatile organic compound (VOC) emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

- Regulation XII: Prohibitions, Rule 1200: TACs –Requires stationary sources to be equipped with Toxic Best Available Control Technology (BACT) if the maximum incremental Cancer Risk is found to be greater than 1 in 1 million. With implementation of applicable BACT's, SDAPCD allows an incremental Cancer Risk less than 10 in 1 million. According to SDAPCD's New Source Review Requirements for Best Available Control Technology Guidance Document (SDAPCD 2011), the following applicable BACT's would apply to the project in respect to off-road construction equipment:

- California use Clean Diesel fuel and Turbocharger, Low Temperature Aftercooler, and Retardation of Fuel Injection Timing 4 Degrees from manufacturer's specification, EPA or ARB certified engine and positive crankcase ventilation (PCV) filter.

The RAQS contains six Transportation Control Measures that are consistent with program commitments made in the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP) adopted and implemented by SANDAG. The six RAQS Transportation Control Measures relate to: (1) Transit Improvements; (2) Vanpools; (3) High-Occupancy Vehicle (HOV) Lanes; (4) Park-and-Ride Facilities; (5) Bicycle Facilities; and (6) Traffic Signal Improvements. SDAPCD's Indirect Source Program, adopted by the District Board in December 1997, consists of ongoing outreach and assistance to local governments, land developers, and neighborhood groups to reduce vehicle trips and associated emissions through voluntary land use and street design improvements (i.e., "smart growth") (SDAPCD 2016).

The SDAPCD provides ongoing technical assistance to SANDAG on programs to encourage smart growth. The SDAPCD has also conducted public workshops and other forms of public outreach focused on improving the conditions for pedestrians, bicyclists, and transit.

Odorous Emissions

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). Offensive odors are unpleasant and can lead to public distress that generates citizen complaints to local governments. Although unpleasant, offensive odors rarely cause physical harm. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source, along with wind speed, direction, and the sensitivity of receptors. Generally, increasing the distance between the receptor and the odor source will mitigate odor impacts. However, because offensive odors rarely cause any physical harm and no requirements for their control are included in state or national air quality regulations, the SDAPCD has no rules or standards related to odor emissions, other than its nuisance rule (Rule 51), as described below in Section 2.2.2.5.

2.2.2 Analysis of Project Effects and Determination as to Significance

For the purpose of this EIR, the identified significance thresholds are based on criteria provided in the County Guidelines for Determining Significance and Report Format and Content Requirements for Air Quality (County Guidelines for Air Quality), approved March 19, 2007.

2.2.2.1 Issue 1: Conflict or Obstruct Implementation of the Applicable Air Quality Plan

Guidelines for the Determination of Significance

Based on the County Guidelines for Air Quality, a significant impact would occur if the proposed project would conflict with or obstruct the implementation of the RAQS or applicable portions of the State Implementation Plan.

Analysis

The SDAPCD RAQS is the regional air quality plan that is applicable to the County of San Diego, including the project area. The RAQS contains rules and regulations that are implemented by the SDAPCD to help the region meet the clean air standards required by federal and state law. The RAQS relies on projected growth in the County as well as mobile, area, and other sources of emissions, as obtained from CARB and SANDAG to project future emissions within the County. Based on these emissions, reduction strategies are determined to reduce emissions in order to achieve or maintain attainment with state and federal standards. CARB mobile source emissions projections and SANDAG growth projections are based on information provided by the County's general plan. Therefore, projects that propose development consistent with the applicable general plan would be consistent with the RAQS and the SIP. If the project's growth exceeds the projections anticipated in the general plan, then the project would conflict with the RAQS and the SIP.

Based on the County's general plan, the project area is identified as Public Agency Lands. The proposed project consists of the operation of a 16-year mining and reclamation project which would not result in population growth within the County. The proposed project would not include residential development, and would create eight full-time positions.

The goals of the proposed project include recovery of construction aggregate to address the needs for this resource within the County to help meet current and projected market demand. This would reduce the County's dependence on imported resources, which could potentially reduce vehicle miles traveled (VMT) and vehicle emissions within the County. The end result of the proposed project is to return the project site to open space with easements for trails along the San Diego River Basin for recreational use.

Neither of these uses would result in growth within the County, and the use of local aggregates would reduce VMT and emissions from vehicles within the County associated with transporting aggregate from more distant locations to meet County market demand. The proposed project is consistent with the designated land use identified in the County's general plan and zoning and would

not exceed the anticipated growth projections. Therefore, the proposed project would not conflict with or obstruct implementation of the RAQS or the SIP, and impacts would be **less than significant**.

2.2.2.2 Issue 2: Violate an Air Quality Standard

Guidelines for the Determination of Significance

Based on the County Guidelines for Air Quality, a significant impact would occur if the proposed project would:

- Result in emissions that exceed 250 pounds per day of NO_X, or 75 pounds per day of VOCs.
- Result in emissions of CO that when totaled with the ambient concentrations will exceed a 1-hour concentration of 20 ppm or an 8-hour average of 9ppm.
- Result in emissions of $PM_{2.5}$ that exceed 55 pounds per day.
- Result in emissions of PM_{10} that exceed 100 pounds per day or increase the ambient PM_{10} concentration by 5 $\mu g/m^3$ or greater at the maximum exposed individual.

Analysis

Criteria Air Pollutants

Mining activities would generate air pollutant emissions at the project site and on roadways resulting from mining-related traffic. The net increase in emissions generated by these activities and other secondary sources have been estimated and compared to the applicable Screening Level Thresholds (SLTs) (stated above) recommended by the County.

Construction Impacts

Site preparation and mining activities would include the construction of the drop structure (channel erosion barrier), access road, processing area pad, and screening berms. The drop structure would be constructed across the San Diego River channel at the east end of the extractive area to prevent channel erosion during periods of water flow in the channel. The drop structure would be located approximately 300 feet west of Dairy Road, and would consist of grouted rip rap approximately 2.7 feet thick. Cut slopes would be mined at a constant 3H:1V (horizontal:vertical) slope. Site preparation activity would also include the establishment of a sub-grade processing plant pad 10 feet below the existing ground surface (bgs) at the southwest processing plant location, and a sub-grade

haul road approximately 10 to12 feet bgs. Earthen berms would be constructed around the top sides of the plant pad area and along both sides and parallel to the road to screen the equipment and operation from public view. This construction activity would occur at the same time as the initial mining operations would begin and would use the same pieces of equipment that would be operated onsite on any given day. The number of pieces of equipment would not change and equipment would be assigned to either “construction” activities or “operational” activities as required by the needs of the project. Because the construction activities would not require the daily operation of additional pieces of equipment and the emissions would occur simultaneously with the operational emissions, construction emissions are embedded within the operational emissions analysis and are not considered as a separate distinct phase in this analysis.

Operational Impacts

Onsite mining and plant operations would occur between 7 a.m. and 5 p.m. Monday through Friday. Aggregate transport would be conducted between 7 a.m. and 5 p.m. Monday through Friday as well as 7 a.m. to 1 p.m. on Saturdays. The site would remain closed on Sundays and holidays. During maximum production, the site would generate 157 one-way truck trips. Maximum excavation would extend to a depth of 36 to 41 feet. Table 2.2-5 gives an overview of the project timeline. A list of equipment/machinery associated with each project component can be found in Appendix F.

Long-term (i.e., operational) regional emissions of criteria air pollutants and precursors associated with the proposed project, including mobile- and area-source emissions, were also quantified using the CalEEMod computer model where appropriate. Mining equipment emissions were calculated using EPA’s AP-42 emission rates because CalEEMod does not allow the user to estimate mining equipment emissions. Area source emissions, which are widely distributed and made of many small emissions sources (e.g., building heating and cooling units, landscaping equipment, consumer products, painting operations, etc.), are not anticipated for this project as the onsite buildings are modular and heating/cooling as appropriate would be electric. The project would include landscaping along the northern edge of El Monte Road near the entrance to the project site, however, it would be limited in extent, and as such, routine use of fossil-fueled landscaping equipment is not expected. There would be no painting operations associated with the operation of the project. Consumer product use would be minimal and negligible based on the one onsite modular building. Mass mobile-source emissions were modeled based on the daily vehicle trips that would result from the project. Vehicle trip distances for workers and venders were based on the CalEEMod default values. Haul truck trip lengths were based on an estimated trucking length within the County for aggregate delivery. Estimated haul truck trip distance is 30 miles. The mobile processing

plant would be placed near each phase of the project, starting in the east and would be re-located multiple times as the project proceeds west in order to minimize the onsite distance between the plant and the active mining area. Figure 1-4 shows the approximate locations of each of the mobile processing southwest processing plant at location number 7 on Figure 1-4. The long-term operational emissions, once calculated based on the above, were then compared with the applicable County SLTs to determine significance. Modeling assumptions and output files are provided in Appendix F.

Implementation of the proposed project would result in long-term regional emissions of criteria air pollutants and O_3 precursors associated with area sources, such as natural gas consumption, landscaping, applications of architectural coatings, and consumer products, in addition to operational mobile emissions estimated from data included in the El Monte Sand Mining Traffic Impact Analysis (Linscott, Law & Greenspan, Engineers 2015) prepared for the proposed project. Operations emissions associated with the proposed project were modeled using CalEEMod. Model defaults were adjusted to reflect project-specific data, where available, including the size and type of the proposed land use and project specific trip rates.

Table 2.2-6 shows that the project would generate ROG, NO_X, CO, SO_X, $PM_{10,}$ and $PM_{2.5}$ emissions. ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ would not exceed the CEQA thresholds and, therefore, would not result in or substantially contribute to emissions concentrations that would exceed the NAAQS and CAAQS for these criteria pollutants. Additionally, with the implementation of design considerations (DCs) **DC-AQ-1** through **DC-AQ-4**, listed below, the emissions of criteria pollutants from the proposed mining activities would be further reduced below regulatory thresholds (see Table 2.2-7[1]). Therefore, project impacts would be **less than significant**.

DC-AQ-1: As required by the SDAPCD Rule 55, the following measures shall be incorporated to reduce emissions of fugitive dust:

- All haul trucks leaving the project site with aggregate shall maintain at least 2 feet of freeboard or securely cover the loads.
- Watering shall be conducted three times per day for all active construction areas and on unpaved roads. Water shall be applied using water trucks and shall be sufficient to confine dust plumes to the immediate work area.

[1] Table 2.2-7 also includes reductions to daily emissions with the incorporation of mitigation measure AQ-1. While daily unmitigated emissions do not exceed regulatory thresholds, the incorporation of mitigation measure AQ-1 as required under *Issue 4* (Section 2.2.2.4) below, would further reduce emissions below regulatory thresholds.

- Mining activities shall be suspended when winds exceed 25 mph.
- Sweepers and water trucks shall be used to control dust at public street access points. Paved streets shall be swept at least once per day when evidence of track-out (excess sediment and/or dust that is inadvertently carried out by vehicle or equipment tires onto paved roads, creating visible roadway dust) is present.
- Vehicle speeds on unpaved roadways shall not exceed 15 mph.
- Inactive disturbed areas where mining activities have been completed shall be revegetated as soon as possible to prevent soil erosion.
- Chemical stabilizers, or other methods of soil stabilization/fugitive dust prevention, shall be applied to all disturbed surfaces left inactive for four or more days.

DC-AQ-2: All construction equipment and trucks shall be maintained and tuned according to manufacturer's specifications.

DC-AQ-3: Diesel trucks shall be prohibited from idling for more than 5 minutes. Idling restrictions shall be posted at truck entrances and at loading areas.

DC-AQ-4: Water sprayers shall be used at transfer points as necessary to control dust from aggregate washing/separation activities.

2.2.2.3 Issue 3: Cumulatively Considerable Net Increase of Criteria Pollutants

Guidelines for the Determination of Significance

The County Guidelines for Air Quality establish the levels of significance for operational activities. Based on the County Guidelines for Air Quality, a significant impact would occur if the proposed project would:

- Not conform to the RAQS.
- Exceed the following criteria pollutant emissions thresholds:
  - 250 lbs/day NO_X,
  - 75 lbs/day VOCs,
  - 550 lbs/day CO,
  - 55 lbs/day $PM_{2.5}$, and/or
  - 100 lbs/day PM_{10}.

- Creates a CO Hotspot.

Analysis

The proposed project would be consistent with the designated land use identified in the County's general plan and zoning, and would not exceed the anticipated growth projections. As a result, the project would conform with the RAQS and SIP. Therefore, it is not anticipated to result in cumulatively considerable operational impacts.

Construction activities would not require additional equipment and the construction emissions would occur simultaneously with the operational emissions. Therefore, construction emissions are not considered separately in this analysis.

With implementation of the project specific design considerations, operational emissions from the proposed project would not exceed any of the County's applicable SLTs. Therefore, the proposed project would not lead to a cumulatively considerable net increase in criteria pollutants.

CO emissions result from the combustion of fuels, and hotspots result from excessive idling at area intersections. These hotspots are areas where CO concentrations would exceed the NAAQS or CAAQS for CO emissions. Presently CO hotspots are determined based on level of service (LOS) and vehicle volumes at intersections. A detailed CO hotspot analysis for project and cumulative impacts is presented in Section 2.2.2.4, below. As detailed, the proposed project would not result in cumulatively considerable CO hotspots.

Based on the analysis provided herein, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which SDAB is non-attainment under applicable NAAQS or CAAQS. Therefore, project impacts would be **less than significant**.

2.2.2.4 Issue 4: Expose Sensitive Receptors to Substantial Pollutant Concentrations

Guidelines for the Determination of Significance

Based on the County Guidelines for Air Quality, a significant impact would occur if the proposed project would:

- Place sensitive receptors near CO hotspots or creates CO hotspots near sensitive receptors.

- Result in exposure to TACs resulting in a maximum incremental cancer risk greater than 1 in 1 million without application of Toxics-Best Available Control Technology (T-BACT) or a health hazard index greater than one.

Analysis

CO Hotspots

The County Guidelines for Air Quality state that areas where CO concentrations exceed the NAAQS and/or CAAQS have been found to occur at signalized intersections operating at or below a LOS E and where peak-hour trips exceed 3,000 trips. Therefore, as a screening level analysis, a project that would cause an intersection to be degraded from a LOS of D to E or an LOS of E to F and would have peak-hour trips greater than 3,000 trips would be required to conduct a further hotspot analysis.

For the purposes of this analysis, the change in LOS of project intersections combined with the peak hourly vehicle volumes through studied intersections will be reviewed to evaluate the potential impacts associated with CO hotspots. Intersections where the project causes the intersection to operate at a LOS of E or worse, and exceeds 3,000 vehicles in the peak hour would be required to conduct dispersion modeling to determine the potential impact from the impacted intersections.

CO emissions are the result of the combustion process and therefore primarily associated with mobile source emissions (vehicles). CO concentrations tend to be higher in urban areas where there are many mobile-source emissions. CO “hotspots” or pockets where the CO concentration exceeds the NAAQS and/or CAAQS, have been found to occur only at signalized intersections that operate at or below LOS E with peak-hour trips for that intersection exceeding 3,000 trips (San Diego County 2007).

According to the County Guidelines for Air Quality, a project would expose sensitive receptors to substantial pollutant concentrations if it places sensitive receptors near CO hotspots or creates CO hotspots near sensitive receptors. The proposed project would be significant if it results in CO emissions that when added to the ambient concentrations would exceed a 1-hour concentration of 20 parts per million (ppm) or an 8-hour average of 9 ppm. For the purposes of this analysis, the proposed project would be compared to screening levels. If the screening levels would be exceeded, then further analysis would be conducted. If the proposed project does not exceed the screening levels, then the intersection would be assumed to not exceed the 1- or 8-hour standards. Additional analysis would be required if a project intersection LOS is degraded (change from LOS D to E or E to F) and has peak hourly traffic flow of greater than 3,000 vehicles.

The Traffic Impact Study prepared for the proposed project (Linscott, Law, & Greenspan, Engineers 2018; Appendix U) indicates that the intersection of Lake Jennings Park Road and Julian Avenue/El Monte Road would result in a degradation in LOS from D to E or worse under the existing plus project scenario. However, peak hour volumes for this scenario would be 1,369 for the AM peak and 1,465 for the PM peak (refer to Figure 7-6, Study Intersection #5, of the Traffic Impact Study). Therefore, this intersection would not exceed the screening levels. Additionally, while the intersection of Mapleview Street and SR-67 would exceed 3,000 vehicles in the peak hour existing plus project scenario, the project itself would not cause the degradation of LOS. Therefore, none of the intersections would exceed the screening level thresholds and no further analysis or mitigation is needed. This impact would be **less than significant**.

Toxic Air Contaminants and Health Risk

The latest 2015 guidance from the Office of Environmental Health Hazard Assessment (OEHHA 2015) was used to evaluate if future mining operations at the El Monte Mine would expose residents and workers to significant health risk. Health risks associated with TAC exposure fall into three categories: acute, chronic, and carcinogenic. Acute and chronic health risks consist of non-cancer health effects. Acute health risks are associated with exposures ranging from 1 to 8 hours. Chronic health risks are associated with exposures of one year or more. Carcinogenic health risks are associated with long-term exposures ranging from 25 to 70 years.

Diesel particulate matter and crystalline silica represent the primary TACs of concern associated with aggregate mining projects. Both off-road mining equipment and on-road haul trucks produce DPM exhaust. Onsite workers and nearby residents could be exposed to this exhaust, resulting in potential cancer risks and chronic health impacts. Fugitive dust emission generated by onsite operations may expose onsite workers and nearby residences to crystalline silica. DPM and crystalline silica exposure does not pose any known acute health risks (OEHHA 2015).

According to SDAPCD’s Regulations XII: Prohibitions, Rule 1200: Air Contaminants, an incremental cancer risk greater than 1 in 1 million without implementation of BACT, or greater than 10 in 1 million with the application of BACTs as a significant impact (SDAPCD 2015). Also, SDAPCD considers a health hazard index greater than one as significant. The health risk analysis described below uses these thresholds to determine significance.

This assessment uses recent regulatory guidance to determine if the project would expose residents and workers to significant health risks (OEHHA 2015; SDAPCD 2015). First, the AERMOD model was used to convert DPM and crystalline silica emissions to annual concentrations at nearby residences and

businesses. Then, CARB's HARP 2 computer model was used to convert the DPM and crystalline silica concentrations to cancer risks and chronic health hazards. Cancer risks were estimated using a residential 30-year exposure and an occupational 25-year exposure[2]. The Air Quality Technical Report contains additional details on the modeling assumptions and results (Appendix F).

The project could expose the public to TACs, including DPM and fugitive dust, at levels that could increase the risk of cancer and chronic and acute health problems associated with such emissions. DPM concentrations from construction and operation were estimated using the project specific emissions produced by CalEEMod. Those emissions were input into the AERMOD dispersion model to estimate DPM concentrations. Dispersion modeling found that the proposed project's emissions would result in an annual DPM concentration of 0.05 micrograms per cubic meter (µg/m^3) onsite and 0.03 µg/m^3 at the nearest residential dwelling located adjacent to the project site on the north, directly across Willow Road from where the mining activities would occur. These DPM concentrations would result in a 25-year occupational exposure cancer risk of 3.1 in 1 million and a 30-year residential exposure cancer risk of 26.5 in 1 million. The employees working within the project site and the nearest residential dwelling to the project site would be exposed to a 30-year cancer risk that would exceed SDAPCD's cancer risk significance threshold of an incremental increase of 1 in 1 million without implementation of BACT. This is a **significant impact (Impact AQ-1)**.[3,4]

With respect to non-cancer impacts, the health hazard index for DPM was found to equal 0.01, which is well below the threshold of one (calculated as the maximum annual DPM concentration of 0.05 µg/m^3 divided by the OEHHA inhalation REL for DPM of 5 µg/m^3). Therefore, non-cancer impacts would be **less than significant**.

[2] The project lifetime would be 16 years including reclamation activities; however, the OEHHA methodology indicates a minimum exposure period of 30 years for residential and 25 years for employees are analyzed. While the exposure period is 30 years, 13 years (year 17 through year 30) would result in 0 emissions exposure because the project is no longer operating. Therefore, even though a 30-year exposure period is used, risk estimated based on the 16 years of pollutant emissions.

[3] Risk estimates for residential and occupational exposures are calculated based on the duration of the exposure as well as different breathing rates. Residential exposure takes into account children that could be living at the residence from in-utero until the end of the project. Due to their developing lungs their breathing rates differ from that of an adult and therefore the potential risk from exposure is greater for a resident than that of an adult worker exposed to the same pollutant concentrations.

[4] While the revisions to the PD reduces haul truck trips (see Appendix B, Revisions to Project Assumptions, of Appendix F, Air Quality Technical Report), the emissions associated with the Health Risk analysis are minor compared to the total overall DPM emissions from the total haul truck trips and therefore represent a small fraction of the health risk. While decreasing the haul truck emissions would further reduce the health risk, the reduction would be minimal and would not reduce unmitigated emissions to a less than significant level. As the mitigate emissions from the original analysis are below the significance thresholds with mitigation and the reductions would be minimal, a revised health risk was not conducted. Therefore, the risk presented in the analysis is a conservative risk.

2.2.2.5 Issue 5: Create Objectionable Odors Affecting Substantial Numbers of People

Guidelines for the Determination of Significance

Based on the County Guidelines for Air Quality, a significant impact would occur if the proposed project would generate objectionable odors or place sensitive receptors next to existing objectionable odors.

Analysis

SDAPCD Rule 51 (Public Nuisance) and California Health & Safety Code, Division 26, Part 4, Chapter 3, Section §41700 prohibit the emission of any material which causes nuisance to a considerable number of persons or endangers the comfort, health or safety of the public. The proposed project is required to obtain Permits to Construct/Permits to Operate from the SDAPCD, which is typical of industrial and some commercial projects. For projects requiring SDAPCD permits, facility processes are evaluated by SDAPCD staff for potential odor nuisance, and conditions may be applied (or control equipment required), where necessary, to prevent occurrence of public nuisance.

Odor issues are very subjective by the nature of odors themselves, and their measurements are difficult to quantify. As a result, this guideline is qualitative and each project is reviewed on an individual basis, focusing on the existing and potential surrounding uses and location of sensitive receptors.

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Exhaust from equipment and on-road haul trucks during the duration of the proposed mining and reclamation activities may produce discernible odors typical of most construction sites. Such odors could be a temporary nuisance to adjacent uses, but would not affect a substantial number of people. As odors associated with the proposed project would be intermittent over the 16-year project lifetime, the odors would not be considered a significant impact.

The proposed project does not include the development of sensitive receptors that would be affected by offsite odor generation.

Therefore, impacts associated with objectionable odors would be **less than significant**.

2.2.3 Cumulative Impact Analysis

Issue 1: Conflict or Obstruct Implementation of the Applicable Air Quality Plan

The geographic context for the analysis of cumulative impacts relative to criteria pollutants is the SDAB. Similar to the proposed project, other cumulative projects in the SDAB would be required to demonstrate compliance with the RAQS and SIP. However, other cumulative projects could have the potential to exceed the thresholds of the RAQS or SIP. In accordance with CEQA, other cumulative projects that would exceed the thresholds of the RAQS and SIP would be required to mitigate project impacts to the lowest level feasible. Even with the implementation of project-specific mitigation measures, development projects may still exceed the RAQS or SIP. Therefore, a significant cumulative impact could occur within the SDAB.

Projects that propose development consistent with the County's General Plan would be consistent with the RAQS and the SIP, while projects that exceed the growth projections included in the General Plan would conflict with the RAQS and the SIP. By the nature of the RAQS and SIP, if a project can demonstrate compliance then project impacts to air quality, both directly and cumulatively, are considered less than significant. The proposed project would not include the construction of residential developments and is consistent with the designated land uses identified in the County's General Plan. Since the proposed project would be consistent with the County's General Plan growth projections, the project would be consistent with the RAQS and SIP. Therefore, impacts associated with exceedance of the RAQS and SIP are **not considered cumulatively considerable.**

Issue 2: Violate an Air Quality Standard

The geographic context for the analysis of cumulative impacts relative to criteria pollutants is the SDAB. Similar to the proposed project, other cumulative projects in the SDAB would be required to demonstrate that project-generated emissions of criteria pollutants do not exceed the thresholds of the NAAQS and CAAQS. Development projects that exceed the thresholds of the NAAQS and CAAQS would be required to implement project-specific mitigation measures to reduce project impacts to the lowest level feasible. However, development projects have the potential to exceed the thresholds of the NAAQS or CAAQS could result in a significant cumulative impact to air quality standards.

Operational emissions generated by the proposed project would not exceed the thresholds for ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$, and would not exceed any of the County's applicable SLTs. In addition, the proposed project would incorporate design considerations **DC-AQ-1** through **DC-AQ-4** to further reduce emissions from criteria pollutants further below regulatory thresholds. Therefore,

impacts associated with air quality standards are **not considered cumulatively considerable.**

Issue 3: Cumulatively Considerable Net Increase of Criteria Pollutants

Cumulatively considerable net increases would typically happen if two or more projects near each other were simultaneously constructing projects that resulted in a cumulatively considerable net increase of any criteria air pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standards (PM_{10} or $PM_{2.5}$, or exceed quantitative thresholds for O_3 precursors, NO_X and VOCs). The SDAB is designated as a nonattainment area for the O_3 NAAQS, and the O3, PM_{10}, and $PM_{2.5}$ CAAQS.

A proposed project that has a significant direct impact on air quality with regard to emissions of PM_{10}, $PM_{2.5}$, NO_X, and/or VOCs would also lead to a cumulatively considerable net increase in these pollutants. In the event that direct impacts from a proposed project are less than significant, it may still have a cumulatively considerable impact on air quality if the emissions of concern from other proposed projects or reasonably foreseeable future projects are in excess of the County Guidelines for Air Quality (County of San Diego 2007).

Construction activities would not require additional equipment and the construction emissions would occur simultaneously with the operational emissions; therefore, construction emissions are not considered separately in this analysis. Operational emissions generated by the proposed project would not exceed the thresholds for ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$, and would not exceed any of the County's applicable SLTs. Further, incorporation of design considerations **DC-AQ-1** through **DC-AQ-4** would further reduce operational emissions from criteria pollutants further below regulatory thresholds. Thus, project impacts to PM_{10}, $PM_{2.5}$, NO_X, and/or VOCs would result in a less than significant cumulative impact.

Table 1-11 provides a list of past, present, and reasonably anticipated future projects in the project area, which are also depicted in Figure 1-11. As shown in Table 2.2-2, the SDAB is designated as non-attainment for ozone (NAAQS and CAAQS) and for PM10 and PM2.5 (CAAQS). Cumulative development has the potential to perpetuate or worsen attainment of these standards. However, like the proposed project, cumulative development is also subject to the plans and control measures presented in the SDAPCD's RAQS, which is updated to incorporate land use projections for the County and other local jurisdictions. As shown in Table 1-11, there are 22 cumulative projects identified. In accordance with SDAPCD and CEQA requirements, all projects identified are required to comply with applicable emissions regulations and implement mitigation measures and/or design considerations in order to comply with SDAPCD's RAQS and to minimize or reduce emissions to below the San Diego Screening Level

Thresholds shown in Table 2.2-4. In the case of the proposed project, design considerations **DC-AQ-1** through **DC-AQ-4** would be implemented to minimize emissions from criteria pollutants further below the thresholds. In addition, as discussed in more detail under Issue 4, the proposed project would implement mitigation **M-AQ-1**, which would require all off-road equipment to be retrofitted with Tier 4 or greater engines and would reduce combustion-related pollutants from off-road diesel-powered mining equipment. While **M-AQ-1** is required to reduce potentially significant health risk impacts to below the health risk threshold, it also has co-benefits of further reducing criteria pollutant emissions beyond the reductions that would already occur from implementation of **DC-AQ-1** through **DC-AQ-4**. Similar to the proposed project, cumulative development would also be required to implement mitigation and/or design considerations to reduce potentially significant impacts to air quality.

Based on the analysis provided herein, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the SDAB is non-attainment under applicable NAAQS or CAAQS. Implementation of the proposed project would not generate emissions that would exceed regulatory thresholds for criteria pollutants. Therefore, impacts to criteria air pollutants are **not considered cumulatively considerable**.

Issue 4: Expose Sensitive Receptors to Substantial Pollutant Concentrations

CO Hotspots

The County Guidelines for Air Quality state that areas where CO concentrations exceed the NAAQS and/or CAAQS have been found to occur at signalized intersections operating at or below a LOS E and where peak-hour trips exceed 3,000 trips. Further, the County Guidelines for Air Quality state that a project would expose sensitive receptors to substantial pollutant concentrations if it places sensitive receptors near CO hotspots or creates CO hotspots near sensitive receptors. Implementation of the proposed project would not place sensitive receptors near CO hotspots or create CO hotspots near sensitive receptors. Additionally, the proposed project would not degrade the LOS of any of the project area intersections and would not exceed the screening level thresholds. Under the near-term plus project scenario, the peak hour volumes would be 1,519 for the AM peak and 1,650 for the PM peak (refer to Figure 9-2, Study Intersection #5, of the Traffic Impact Study). Therefore, this intersection would not exceed the screening levels. Additionally, while the intersection of Mapleview Street and SR-67 would exceed 3,000 vehicles in the peak hour near-term plus project scenario, the increase in traffic would not degrade the LOS. Therefore, none of the intersections would exceed the screening level thresholds and no further analysis or mitigation is needed. Therefore, impacts related to CO hotspots are **not considered cumulatively considerable.**

TACs and Health Risk

Cumulative impacts with respect to TACs emissions are the combined total of all impacts resulting from the operation of the proposed project and all existing offsite TAC sources. The proposed project would expose the public to TACs, including DPM and fugitive dust, at levels that could increase the risk of cancer and chronic and acute health problems associated with such emissions. The employees working within the project site and the nearest residential dwelling to the project site would be exposed to a 30-year cancer risk that would exceed SDAPCD's cancer risk significance threshold of an incremental increase of 1 in 1 million without implementation of BACT. Cumulative development also has the potential to generate TAC emissions that could result in an incremental increase in the risk of cancer and chronic and acute health problems associated with such emissions. As the proposed project would exceed SDAPCD's cancer risk significance threshold of an incremental increase of 1 in 1 million without implementation of BACT, the project, when considered with cumulative development would also result in a cumulative health risk impact. Thus, the proposed project would result in a **cumulatively considerable significant impact (Impact AQ-2)** associated with TACs and health risk.

Issue 5: Create Objectionable Odors Affecting Substantial Numbers of People

Impacts relative to objectionable odors are generally limited to the area in close vicinity to the odor source and are not cumulative in nature because the air emissions that cause odors disperse beyond the sources of the odor. As the emissions disperse, the odor becomes less and less detectable. The proposed project would not place new odor sources near existing sensitive receptors. In addition, the proposed project does not include the development of sensitive receptors that would be affected by offsite odor generation. Furthermore, like the proposed project, cumulative development would be required to comply with applicable SDAPCD regulations regarding odors, including SDAPCD Rule 51 (Public Nuisance) and California Health & Safety Code, Division 26, Part 4, Chapter 3, Section §41700, which prohibit the emission of any material which causes nuisance to a considerable number of persons or endangers the comfort, health or safety of the public. Other SDAPCD regulations would also apply to specific types of cumulative development that could generate odors (e.g., Rule 67.0.1 (Architectural Coatings) requires end users of architectural coatings to use coatings that meet VOC content limits). Therefore, based on compliance with applicable regulations, as well as CEQA requirements to implement mitigation and/or design considerations to reduce potentially significant impacts, impacts related to objectionable odors are **not considered cumulatively considerable.**

2.2.4 Significance of Impacts Prior to Mitigation

The following significant impacts related to air quality would occur with project implementation:

Impact AQ-1 The proposed project would expose sensitive receptors to substantial pollutant concentrations and TACs, resulting in a maximum incremental cancer risk greater than 1 in 1 million without implementation of BACT or at concentrations that exceed County thresholds.

Impact AQ-2 The proposed project would result in a cumulatively considerable significant impact related to exposing sensitive receptors to levels of TACs that exceed County thresholds.

2.2.5 Mitigation

M-AQ-1: Engine Standards for Off-Road Equipment. To reduce the impact of mining equipment DPM emissions, the project applicant shall ensure that all off-road diesel-powered equipment used will be equipped with USEPA Tier 4 or cleaner engines. This condition pertains to all excavators, graders, loaders, draglines, and dozers operated in Phases 1 through 4 of mining activities. In lieu of Tier 4 engines, project equipment can incorporate retrofits such that emissions reductions achieved can be verified to equal that of the Tier 4 engines. The project applicant shall submit a detailed list of the equipment fleet that demonstrates achievement of this mitigation measure to the County prior to receiving a permit to construct and/or beginning operations. The modeling states that Tier 4 Equipment for onsite operations includes: excavators, graders, and dozers.

2.2.6 Conclusion

The proposed project would expose the public to TACs, including DPM and fugitive dust at levels that could increase the risk of cancer and chronic and acute health problems associated with such emissions. The employees working within the project site and the nearest residential dwelling to the project site would be exposed to a 30-year cancer risk, which would exceed SDAPCD's cancer risk significance threshold of an incremental increase of 1 in 1 million without implementation of BACT. Therefore, project-generated emissions of TACs would result in direct and cumulatively significant impacts (Impacts AQ-1 and AQ-2). However, implementation of **M-AQ-1** would require all off-road equipment to be retrofitted with Tier 4 or greater engines and would reduce combustion-related pollutants from off-road diesel-powered mining equipment. The dispersion modeling with implementation of **M-AQ-1** found that the use of an all Tier 4 fleet

would result in a TAC concentration level of 0.01 µg/m^3 onsite and at the nearest residence. At this reduced concentration level, onsite workers would be exposed to a 25-year occupational exposure cancer risk of 1.7 in 1 million and the nearest residence would be exposed to a cancer risk of 8.8 in 1 million, which is below the allowed 10 in 1 million permitted under SDAPCD's Rule 1200 with implementation of BACT. Refer to the air quality modeling information provided in Appendix F, Air Quality Technical Report, for detailed calculations. With the implementation of **DC-AQ-1** through **DC-AQ-4** and **M-AQ-1**, mining activities would not expose workers and residences to significant health risks. Therefore, project and cumulative impacts with respect to air quality would be **less than significant.**

Table 2.2-1: Air Quality Data Summary (2014–2016) for the Project Area

		Monitoring Data by Year		
Pollutant	**Standard**	**2014**	**2015**	**2016**
Ozone (O_3) – El Cajon[1] Monitoring Station				
Highest 1 Hour Average (ppm)		0.083	0.082	0.096
Days over State Standard	0.090 ppm	0	0	1
Highest 8 Hour Average (ppm)		0.075	0.067	0.077
Days over National Standard	0.075 ppm	2	0	3
Days over State Standard	0.070 ppm	2	0	3
Carbon Monoxide (CO) – El Cajon[2] Monitoring Station				
Highest 8 Hour Average (ppm)		*	*	*
Days over National Standard	9.0 ppm	*	*	*
Days over State Standard	9.0 ppm	*	*	*
Nitrogen Dioxide (NO_2) – El Cajon[1] Monitoring Station				
Highest 1 Hour Average (ppm)		0.057	0.059	0.057
Days over National Standard	0.100 ppm	0	0	0
Days over State Standard	0.180 ppm	0	0	0
Annual Average (ppm)		*	*	*
Days over National Standard	0.053 ppm	*	*	*
Days over State Standard	0.030 ppm	*	*	*
Sulfur Dioxide (SO_2) – El Cajon[3] Monitoring Station				
Highest 24 Hour Average (ppm)		*	*	*
Days of National Standard	0.140 ppm	*	*	*
Days over State Standard	0.040 ppm	*	*	*
Particulate Matter (PM_{10}) – El Cajon[1] Monitoring Station				
Highest 24 Hour Average (µg/m^3)		35.3	50.3	39.5
Days over National Standard (measured)	150 µg/m^3	0	0	0
Days over State Standard (measured)	50 µg/m^3	0	0	0
Annual Average (µg/m^3)[b]	20 µg/m^3	18.3	22.3	20.0

Pollutant	Standard	Monitoring Data by Year 2014	2015	2016
Particulate Matter ($PM_{2.5}$) – El Cajon[1] Monitoring Station				
Highest 24 Hour Average ($\mu g/m^3$)		13.9	24.7	19.3
Days over National Standard (measured)	35 $\mu g/m^3$	0	0	0
Annual Average ($\mu g/m^3$)	12 $\mu g/m^3$	*	*	*

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.
* = Insufficient data available to determine the value.
[1] There are 2 stations associated with El Cajon. All data is listed for the Floyd Smith Drive Monitoring Station (closest to the project) for O_3, NO_2, PM_{10} and $PM_{2.5}$.
[2] The El Cajon Floyd Smith Drive station does not monitor for CO. CO was not reported in the SDAB for 2014, 2015, or 2016.
[3] The El Cajon Floyd Smith Drive station does not monitor for SO_2. The Redwood Avenue location only has data for 2013. SO_2 was not reported in the SDAB for 2014, 2015 or 2016.

SOURCE: CARB 2018.

Table 2.2-2: SDAB Attainment Status

Pollutant	Attainment Status: California Standards	Federal Standards
O_3 – 1 hour	Non-attainment	No Federal Standard
O_3 – 8 hour	Non-attainment	Non-attainment (moderate)
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Attainment
PM_{10}	Non-attainment	Unclassified/Attainment
$PM_{2.5}$	Non-attainment	Unclassified/Attainment
Pb	Attainment	Unclassified/Attainment

SOURCE: CARB, 2015, 2017; USEPA, 2018.

Table 2.2-3: Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	No National Standard	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when ROG and NO_X react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
	8 hours	0.07 ppm	0.070 ppm		
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, CO interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Arithmetic Mean	0.030 ppm	0.053 ppm		
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	0.075 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3 hours	No State Standard	0.50 ppm (secondary)		
	24 hours	0.04 ppm	0.14 ppm		
	Annual Arithmetic Mean	No State Standard	0.03 ppm		
Respirable Particulate Matter (PM_{10})	24 hours	50 µg/m^3	150 µg/m^3	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Arithmetic Mean	20 µg/m^3	No National Standard		
Fine Particulate Matter ($PM_{2.5}$)	24 hours	No State Standard	35 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO_X, sulfur oxides, and organics.
	Annual Arithmetic Mean	12 µg/m^3	12.0 µg/m^3		
Lead (Pb)	30-Day Average	1.5 µg/m^3	No National Standard	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases).	*Present source:* lead smelters, battery manufacturing and recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	No State Standard	1.5 µg/m^3		
	Rolling three-Month Average	No State Standard	0.15 µg/m^3		
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal power plants, petroleum production and refining
Sulfates (SO_4)	24 hour	25 µg/m^3	No National Standard	Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardio-pulmonary disease; vegetation damage; degradation of visibility; property damage.	Industrial processes.
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, and discourages tourism.	See $PM_{2.5}$.

NOTE: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter.

SOURCE: CARB, 2016.

Table 2.2-4: San Diego Screening Level Thresholds

Pollutant	Mass Daily Thresholds (lbs/day)
Oxides of Nitrogen (NO_X)	250
Reactive Organic Gases (ROG)	75
Respirable Particulate Matter (PM_{10})	100
Fine Particulate Matter ($PM_{2.5}$)	55
Oxides of Sulfur (SO_X)	250
Carbon Monoxide (CO)	550

SOURCE: San Diego County, 2007.

Table 2.2-5: Mine and Reclamation Phasing and Acreage Within Mining Footprint

Phase	Area (acres)*	Mining Duration (Years)	Initiation Year	Completion Year
Mining 1	93	4	2019	2023
Reclamation 1	93	4	2023	2027
Mining 2	52	3	2023	2026
Reclamation 2	52	4	2026	2030
Mining 3	48	3	2026	2029
Reclamation 3	48	4	2029	2033
Mining 4	50	2	2029	2031
Reclamation 4	50	4	2031	2035
Total	243	16		

*rounded off to the nearest acre, including mining area, trails, and staging area
SOURCE: EnviroMINE, Inc., 2016.

Table 2.2-6: Unmitigated Operational Emissions

	Estimated Emissions (lbs/day)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Phase 1 – Mining Activities	13.80	196.97	121.34	0.43	91.50	22.63
Phase 2 – Mining & Phase 1 Reclamation Activities	17.59	244.20	145.68	0.48	95.21	25.09
Phase 3 – Mining Activities & Phase 1 & 2 Reclamation Activities	17.59	244.20	145.68	0.48	95.21	25.09
Phase 4 – Mining Activities & Phase 1, 2 & 3 Reclamation Activities	17.59	244.20	145.68	0.48	95.21	25.09
Reclamation Activities	2.90	32.76	20.17	0.03	42.72	10.44
Total Net Project Emissions	**17.59**	**244.20**	**145.68**	**0.48**	**95.21**	**25.09**
Significance Threshold	*55*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	No	No	No	No	No	No

SOURCE: ESA 2018

Table 2.2-7: Mitigated Operational Emissions

	Estimated Emissions (lbs/day)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Phase 1 – Mining Activities	11.61	169.81	131.18	0.43	90.11	21.35
Phase 2 – Mining & Phase 1 Reclamation Activities	12.39	182.34	156.42	0.48	91.93	22.07
Phase 3 – Mining Activities & Phase 1 & 2 Reclamation Activities	12.39	182.34	156.42	0.48	91.93	22.07
Phase 4 – Mining Activities & Phase 1, 2 & 3 Reclamation Activities	12.39	182.34	156.42	0.48	91.93	22.07
Reclamation Activities	2.90	32.76	20.17	0.03	42.72	10.44
Total Net Project Emissions	**12.39**	**182.34**	**156.42**	**0.48**	**91.93**	**22.07**
Significance Threshold	*55*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	No	No	No	No	No	No

SOURCE: ESA 2018