

3.6 Air Quality

An Air Quality Analysis (AQA) has been prepared by HELIX (2019b). This section summarizes information from this study, which is included in its entirety in Appendix H of this EIR.

3.6.1 Regulatory Framework

Air quality is defined by ambient air concentrations of specific pollutants identified by USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several pollutants (called “criteria” pollutants, specifically, ozone [O₃], particulate matter [PM], carbon monoxide [CO], oxides of nitrogen [NO_x], sulfur dioxide [SO₂], and lead [Pb]).

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as Federal standards. The California Air Resources Board (CARB) has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H₂S), vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or CAAQS for a particular pollutant are considered to be “nonattainment areas” for that pollutant. On April 30, 2012, the SDAB was classified as a marginal nonattainment area for the 8-hour NAAQS for ozone. The SDAB is an attainment area for the NAAQS for all other criteria pollutants. The SDAB currently falls under a national “maintenance plan” for CO, following a 1998 redesignation as a CO attainment area (APCD 2010). The SDAB is currently classified as a nonattainment area under the CAAQS for ozone (serious nonattainment), respirable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}; CARB 2009).

Each nonattainment area must submit a SIP outlining the combination of local, State, and Federal actions and emission control regulations necessary to bring the area into attainment as expeditiously as practicable. Then, even after the nonattainment area attains the air quality standard, it will remain designated a nonattainment area unless and until the state submits to USEPA a formal request for redesignation to attainment. The request must include a “maintenance” plan demonstrating that the area will maintain compliance with that NAAQS for at least 10 years after the USEPA redesignates the area to attainment. A brief summary of the redesignation request and maintenance plan is provided below (APCD 2012).

3.6.1.1 1-Hour Ozone Standard

San Diego County was designated nonattainment for the 1-hour ozone standard on March 3, 1978. The region attained the 1-hour ozone standard in 2001, based on 1999 to 2001 air quality data. The APCD prepared and CARB submitted to the USEPA a redesignation request and maintenance plan in 2002, and the USEPA redesignated San Diego County to attainment for the 1-hour ozone standard on July 28, 2003. The USEPA subsequently revoked the 1-hour ozone standard on

June 15, 2005, after issuing area designations for the more health-protective 1997 8-hour ozone NAAQS. However, the USEPA-approved 1-hour ozone Maintenance Plan remains in effect as the applicable ozone SIP until the USEPA approves a subsequent ozone SIP submittal (i.e., the Maintenance Plan herein) (APCD 2012).

3.6.1.2 1997 8-Hour Ozone Standard

The region was designated nonattainment for the 1997 8-hour ozone NAAQS, effective June 15, 2004, based on ozone air quality measurements over the 2001-2003 three-year period. At that time, the USEPA did not further “classify” the region as marginal, moderate, serious, severe, or extreme nonattainment pursuant to Section 181 of the CAA. Instead, the USEPA relied on CAA provisions in Section 172 that do not require classifications and declared San Diego County (and other regions that had attained the former 1-hour ozone NAAQS but violated the 8-hour standard) to be only basic (unclassified) nonattainment areas. Basic areas are allowed some flexibility in their air quality attainment plans, whereas classified areas are subject to more prescriptive regulatory requirements. In June 2007, the APCD submitted a SIP revision fulfilling the requirements the USEPA had established for a basic nonattainment area.

The USEPA did not, however, take action to approve the 2007 SIP submittal because, also in June 2007, a court ruled that the USEPA must reconsider its implementation methodology and criteria for foregoing nonattainment classifications in affected regions, including San Diego County. In a rulemaking responding to the court remand, the USEPA classified San Diego County as a moderate ozone nonattainment area for the 1997 ozone standard, effective on June 13, 2012. According to the USEPA rulemaking, a SIP submittal addressing moderate ozone nonattainment area control requirements would have been due in June 2013. However, the APCD was already implementing even more stringent NO_x and volatile organic compound (VOC) emission control rules that had been required because the area was previously classified as a serious nonattainment area for the former 1-hour ozone standard.

On December 5, 2012, the APCD adopted its *Ozone Redesignation Request and Maintenance Plan*, which calls for the SDAB to attain the 1997 Federal eight-hour ozone NAAQS, with a request for redesignation to attainment/maintenance area. The APCD’s request for redesignation of San Diego County to attainment of the 1997 ozone NAAQS was approved by the USEPA in May 2013. Because the region attained the standard and the requested redesignation to attainment was approved prior to the June 2013 SIP submittal due date, those moderate area SIP requirements do not apply. Instead, the Maintenance Plan included in this SIP submittal will fulfill that SIP submittal requirement (APCD 2012).

3.6.1.3 2008 8-Hour Ozone Standard

The USEPA designated and classified San Diego County as a marginal ozone nonattainment area for the 2008 ozone standard, effective on July 20, 2012, based on 2009-2011 ozone data. Redesignation to attainment of the 1997 standard, if approved, would not affect the region’s marginal nonattainment status for the 2008 standard (APCD 2012).

The APCD is required to submit a SIP that identifies control measures and emission reductions to achieve attainment status for eight-hour ozone by July 20, 2018. To address this requirement, the

APCD prepared the 2008 Eight-hour Ozone Attainment Plan, which was finalized in December 2016 and was adopted by the APCD.

The CARB is the State regulatory agency with authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS. The CARB is responsible for the development, adoption, and enforcement of the State's motor vehicle emissions program, as well as the adoption of the CAAQS. The CARB also reviews operations and programs of the local air districts and requires each air district with jurisdiction over a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS. The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. The APCD is the local agency responsible for the administration and enforcement of air quality regulations for San Diego County.

The APCD and SANDAG are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The San Diego County RAQS was initially adopted in 1991 and is updated on a triennial basis. The RAQS was initially adopted by the APCD on June 30, 1992, and amended on March 2, 1993, in response to CARB comments. APCD further updated the RAQS Revisions on December 12, 1995; June 17, 1998; August 8, 2001; July 28, 2004; and April 22, 2009. The most recent APCD revisions to the RAQS were adopted by the APCD Board in December 2016. The local RAQS, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to the CARB, which develops the SIP. The APCD has developed its input to the SIP, which includes the APCD's plans and control measures for attaining the ozone NAAQS. APCD submitted an air quality plan to USEPA in 2007; the plan demonstrated how the 8-hour ozone standard would be attained by 2009. Despite best efforts, SDAB did not meet the ozone NAAQS in 2008 and 2009 and APCD is currently revising their air quality plan. These plans accommodate emissions from all sources, including natural sources, through implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and CARB, and the emissions and reduction strategies related to mobile sources are considered in the RAQS and SIP.

The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County as part of the development of the County's General Plan. As such, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the RAQS. In the event that a project would propose development that is less dense than anticipated within the general plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the general plan and SANDAG's growth projections, the project might be in conflict with the RAQS and SIP and might have a potentially significant impact on air quality.

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The SIP also includes rules and regulations that have been adopted by the APCD to control emissions from stationary sources. These SIP-approved rules may be used as a guideline to determine whether a project's emissions would have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for ozone.

Table 3.6-1, *Ambient Air Quality Standards*, presents a summary of the ambient air quality standards adopted by the CAA and CCAA, and Table 3.6-2, *Federal and State Air Quality Designation*, shows the current attainment statuses for San Diego County.

3.6.1.4 CARB Air Quality and Land Use Handbook

CARB published the Air Quality and Land Use Handbook on April 28, 2005 (the "CARB Handbook"), to serve as a general guide for considering health effects associated with siting sensitive receptors proximate to sources of toxic air contaminants (TACs). The CARB Handbook explicitly states that it is advisory in nature and that local land use decisions do not have to be consistent with its recommendations (CARB 2005). Some examples of CARB's recommendations include avoiding siting sensitive receptors within (a) 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (b) 1,000 feet of a transport distribution centers; (c) 300 feet of any dry cleaning operation using perchloroethylene; or, (d) within 500 feet for dry cleaning operation with two or more machines.

3.6.1.5 Toxic Air Contaminants Regulations

California Diesel Regulations

The CARB is responsible for developing statewide programs and strategies to reduce the emission of smog-forming pollutants and toxics by diesel-fueled mobile sources. The identification of diesel particulate matter (DPM) as a TAC in 1998 led the CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in 2000 (CARB 2000).

California Diesel Fuel Regulations

Standards for diesel fuel are contained in Title 13, Division 3, Chapter 5, Article 2 of the California Code of Regulations. These standards include sulfur limitations for diesel fuel sold in California for use in on-road and off-road motor vehicles. Diesel fuel used in motor vehicles was limited to 500 parts per million (ppm) of sulfur starting in October 1993. The sulfur limit was reduced to 15 ppm beginning in September 1, 2006. (A Federal diesel rule similarly limits sulfur content nationwide for on-road vehicles to 15 ppm, which began on October 15, 2006.)

California Off-road Diesel Vehicle Regulation

On July 26, 2007, the CARB adopted a regulation to reduce DPM and NO_x emissions from in-use (existing) off-road heavy-duty diesel vehicles in California (CARB 2007a). Any person, business, or government agency that owns or operates diesel-powered off-road vehicles in California (except for agricultural or personal use, or for use at ports or intermodal rail yards) with engines with

maximum power of 25 hp or greater are subject to the regulation. For example, all off-road diesel-powered construction equipment greater than 50 hp sold after January 2009 is required to meet Tier 2 off-road emission standards. Beginning January 1, 2012 through December 31, 2014, all newly purchased off-road diesel-powered construction equipment greater than 50 hp are required to meet Tier 3 off-road emissions standards. After January 1, 2015, all equipment greater than 50 hp must meet the Tier 4 emission standards. The regulation applies to new equipment commonly purchased for construction, mining, rental, airport ground support, and other industries. Out-of-state companies doing business in California are also subject to the regulation. It should be noted that this regulation does not apply to existing equipment purchased or leased.

California On-road Heavy-duty Diesel Vehicles Regulation

In 2008, the CARB approved a regulation (CARB 2008a) to significantly reduce emissions from existing trucks and buses operating in California. This regulation requires all on-road heavy-duty diesel truck engines to be replaced or retrofitted with PM filter devices certified by CARB. Affected vehicles include on-road, heavy-duty, diesel-fueled vehicles with a gross vehicle weight rating (GVWR) greater than 14,000 pounds; yard trucks with off-road certified engines; and diesel-fueled shuttle vehicles of any GVWR. Out-of-state trucks and buses that operate in California are also subject to the regulation. Approximately 170,000 businesses in nearly all industry sectors in California and almost one million vehicles that operate on California roads each year are affected. Some common industry sectors that operate vehicles subject to the regulation include for-hire transportation; construction, manufacturing, retail, and wholesale trade; vehicle leasing and rental; bus lines; and agriculture.

Naturally Occurring Asbestos

In July 2002, CARB approved an air toxic control measure for construction, grading, quarrying, and surface mining operations to minimize naturally occurring asbestos emissions (CARB 2001). The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos, and it requires notification to the local air district prior to commencement of ground-disturbing activities.

A review of the *General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos* (CGS 2000) was conducted. The guide shows that the Project site is not located in an area of potential naturally occurring asbestos.

Air Toxics Hot Spots Information and Assessment Act

The California Air Toxics Hot Spots Information and Assessment Act (AB 2588) was enacted by the Legislature in 1987 to address public concern over the release of toxic air contaminants into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information to identify sources of toxic air contaminants, assess air toxic problems, locate resulting "hot spots," notify persons that may be exposed to significant risks, and develop effective strategies to reduce potential risks to the public. In San Diego County, there are currently no active aggregate processing facilities that are required to implement a risk reduction plan or conduct public notification (APCD 2017). Table 3.6-3, *Health Risk Assessment Results for*

Aggregate Processing Facilities in San Diego County, presents a summary of previous health risk assessment results for the aggregate facilities in San Diego County.

APCD Rules and Regulations

The APCD also has the authority to adopt and enforce regulations dealing with controls for specific types of stationary sources, emissions of hazardous air pollutants (HAPs), and New Source Review (NSR). The APCD Rules and Regulations are part of the SIP and are separately enforceable by the USEPA. The following APCD rules apply to the Proposed Project:

- Rule 20 (Standards for Granting Permits) establishes the conditions under which an Authority to Construct (ATC) a new source of air pollutants shall be issued. Applicable NSR requirements are contained in Rules 20.1, 20.2, and 20.3. Rule 20.1 (NSR – General Provisions) provides general provisions related to Rule 20 and includes emission calculation procedures. Rules 20.2 (NSR – Non-Major Stationary Sources) and 20.3 (NSR – Major Stationary Sources & Prevention of Significant Deterioration [PSD] Stationary Sources) provide specific requirements for non-major and major sources and include standards for BACT, lowest achievable emission rate (LAER), Air Quality Impact Analysis (AQIA), PSD, public notification, and emission offsets.
- Rule 50 (Visible Emissions) prohibits the excess emissions of visible fugitive dust. Rules 52 (PM), 53 (Specific Air Contaminants), and 54 (Dust and Fumes) limit the allowable particulate emissions from stacks.
- Rule 51 (Nuisance) prohibits emissions that cause a nuisance or other harm to any person. This nuisance rule is identical to the State Health and Safety Code Section 41700 and states: “A person shall not discharge from any source whatsoever such quantities of air contaminants or other material 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 which cause or have a natural tendency to cause injury or damage to business or property.”
- Rule 55 (Fugitive Dust Control) limits fugitive dust emissions.
- Rule 1200 (TAC –NSR) stipulates that proposed facilities with potential emissions of TACs conduct a health risk assessment (HRA) to evaluate off-site impacts from stationary sources on human health. An HRA is included as part of this EIR (refer to Section 8 of the AQA contained in Appendix H). Rule 1210 (TACs Public Health Risks – Public Notification and Risk Reduction) outlines public health risk notification requirements for facilities with potential public health risks at or above levels specified in the rule.

3.6.2 Environmental Setting

3.6.2.1 Climate and Meteorology

The climate in southern California, including the San Diego Air Basin (SDAB), is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean.

Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity. Precipitation is limited to a few storms during the winter season. The climate of San Diego County is characterized by hot, dry summers and mild, wet winters.

Donovan is the closest meteorological monitoring station to the Project site. Wind monitoring data recorded at the Donovan station indicate that the predominant wind direction in the vicinity of Project site is from the west. Average wind speed in the vicinity is approximately 5.3 miles per hour. The annual average temperature in the Project area is approximately 50 degrees Fahrenheit (°F) during the winter and approximately 75°F during the summer. Total precipitation in the Project areas averages approximately 13 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center [WRCC] 2012).

The atmospheric conditions of the SDAB contribute to the region's air quality problems. Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and nitrogen oxides (NO_x) react under strong sunlight, creating smog. Light, daytime winds, predominately from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to carbon monoxide (CO) and NO_x emissions. High NO_x levels usually occur during autumn or winter, on days with summer-like conditions (APCD 2008).

High air pollution levels in coastal communities of San Diego often occur when polluted air from the South Coast Air Basin, particularly Los Angeles, travels southwest over the ocean at night, and is brought onshore into San Diego by the sea breeze during the day. Smog transported from the Los Angeles area is a key factor on more than 50 percent of the days San Diego exceeds clean air standards (APCD 2010). Ozone and precursor emissions (VOCs and NO_x) are transported to San Diego during relatively mild Santa Ana weather conditions. However, during strong Santa Ana weather conditions, pollutants are pushed far out to sea and miss San Diego. When smog is blown in from the South Coast Air Basin at ground level, the highest ozone concentrations are measured at coastal and near-coastal monitoring stations. When the transported smog is elevated, coastal sites may be passed over, and the transported ozone is measured further inland and on the mountain slopes.

3.6.2.2 Background Air Quality

The APCD currently operates a network of 11 ambient air monitoring stations throughout San Diego County (APCD 2017). The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and NAAQS. The monitoring station in closest proximity to the Proposed Project area is the Otay Mesa-Donovan station located approximately one mile to the west at 480 Alta Road.

Data from the Otay-Mesa-Donovan monitoring station are listed in Table 3.6-4, *Ambient Background Concentrations at the Otay Mesa-Donovan Station*, and Table 3.6-5, *Ambient*

Background Concentrations for Other Nearby Monitoring Stations. Air quality data for the Otay Mesa-Donovan air quality monitoring station demonstrate that the Project area had acceptable levels of nitrogen dioxide (NO₂) for the years 2016 to 2018, the most recent years for which data are available (CARB 2019). Conversely, data from this station show that there have been air quality violations for the pollutants ozone, PM₁₀, and PM_{2.5} during the same time frame. This data is consistent with the overall SDAB, which is not in attainment for ozone, PM₁₀, or PM_{2.5}.

Table 3.6-4 highlights violations of the State 1-hour standard for ozone, demonstrating that such violations occurred over the past three years, but that the violations were rare (one day at most per year). Violations of the State and Federal 8-hour standards for ozone are also detailed in Table 3.6-4. This table demonstrates that there have been multiple violations of up to six days per year with respect to the State and Federal 8-hour ozone standards.

Table 3.6-4 also shows violations of State and Federal PM₁₀ and PM_{2.5} standards and demonstrates that State and Federal standard violations have occurred over the past three years.

**Table 3.6-1
AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone⁸	1-Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m ³)		0. 070 ppm (137 µg/m ³)		
Respirable Particulate Matter (PM₁₀)⁹	24-Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		-		
Fine Particulate Matter (PM_{2.5})⁹	24-Hour	-	-	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12 µg/m ³	15 µg/m ³	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	-	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)	-	
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		-	-	
Nitrogen Dioxide (NO₂)¹⁰	1-Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemiluminescence	0.100 ppm (188 µg/m ³)	-	Gas Phase Chemilumi-nescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		0.053 ppm (100 µg/m ³)	Same as Primary Standard	
Sulfur Dioxide (SO₂)¹¹	1-Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	-	Ultraviolet Fluorescence; Spectro-photometry (Pararo-saniline Method)
	3-Hour	-		-	0.5 ppm (1300 µg/m ³)	
	24-Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (365 µg/m ³) (for certain areas) ⁹	-	
	Annual Arithmetic Mean	-		0.030 ppm (80 µg/m ³) (for certain areas) ⁹	-	
Lead^{12,13}	30-Day Average	1.5 µg/m ³	Atomic Absorption	-	-	High Volume Sampler and Atomic Absorption
	Calendar Quarter	-		1.5 µg/m ³	Same as Primary Standard	
	Rolling 3- Month Average	-		0.15 µg/m ³		

**Table 3.6-1 (cont.)
AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Visibility Reducing Particles ¹⁴	8-Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24-Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹²	24-Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

Source: CARB 2016

ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter

Footnotes for Table 3.6-1:

- ¹ California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24-hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- ² National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current Federal policies.
- ³ Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ⁴ Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
- ⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ⁷ Reference method as described by the USEPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the USEPA.
- ⁸ On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
- ⁹ On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- ¹⁰ To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 and 0.100 ppm, respectively.
- ¹¹ On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-hour average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards have are approved.
- ¹² The CARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- ¹³ The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
- ¹⁴ In 1989, the CARB converted both the general statewide 10-mile visibility standards and the Lake Tahoe 20-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

Criteria Pollutant	Federal Designation	State Designation
Ozone (1-hour)	No Federal standard	Nonattainment
Ozone (8-hour)	Nonattainment	Nonattainment
CO	Attainment	Attainment
PM ₁₀	Unclassifiable	Nonattainment
PM _{2.5}	Attainment	Nonattainment
NO ₂	Attainment	Attainment
SO ₂	Attainment	Attainment
Pb	Attainment	Attainment
Sulfates	No Federal standard	Attainment
H ₂ S	No Federal standard	Unclassifiable
Visibility	No Federal standard	Unclassifiable

Source: APCD 2017b

Operator/Facility	Max. Lifetime Cancer Risk per million¹	Lifetime Cancer Burden²	Chronic Total Hazard Index³	Acute Total Hazard Index⁴
Superior Ready Mix / Canyon Rock	5.6	< 0.1	< 0.1	0.47
Hanson Aggregates / Nelson & Sloan / 7 th & Main	4.2	< 0.1	< 0.1	< 0.1
Vulcan / CALMAT Co. / Hwy 76	4.2	< 0.1	< 0.1	< 0.1
Hanson Aggregates / Sim J. Harris	3.9	< 0.1	< 0.1	< 0.1
Hanson Aggregates/ H.G. Fenton/ East County Materials	3.7	< 0.1	< 0.1	< 0.1
Vulcan / CALMAT Co. / Friars Rd	3.3	< 0.1	0.14	0.3
Hanson Aggregates / Nelson & Sloan / Tri Way	3.1	< 0.1	< 0.1	0.1
Hanson Aggregates / H.G. Fenton / Carrol Canyon	2.6	< 0.1	< 0.1	< 0.1
Hanson Aggregates / Nelson & Sloan / Birch Quarry	2.1	< 0.1	< 0.1	0.1

Table 3.6-3 (cont.) HEALTH RISK ASSESSMENT RESULTS FOR AGGREGATE PROCESSING FACILITIES IN SAN DIEGO COUNTY				
Operator/Facility	Max. Lifetime Cancer Risk per million¹	Lifetime Cancer Burden²	Chronic Total Hazard Index³	Acute Total Hazard Index⁴
Asphalt Inc.	1.3	< 0.1	< 0.1	< 0.1
Vulcan / CALMAT Co. / Black Mountain Road	1.3	< 0.1	0.20	0.4
Hanson Aggregates / South Coast Materials	0.7	< 0.1	< 0.1	< 0.1

Source: APCD 2013. 2012 Air Toxics “Hot Spots” Program Report for San Diego County.

Notes:

1. This column reports the maximum lifetime excess cancer risk estimate at an occupational or residential receptor (whichever is greater) approved by the District. The maximum estimated risk generally is possible at only one location. All other locations show lower risks. This estimate assumes that a person resides at the location of maximum impact 24 hours per day, 365 days per year, for 70 years of exposure or a person works at the location of maximum impact 8 hours per day, 245 days per year, for 40 years of exposure. Actual cancer risk will likely be less.
2. Excess cancer burden is an estimate of the increased number of cancer cases in a population (i.e., all census tracts within or partially within the one in one million people) as a result of exposure to emitted substances. Actual cancer burden will likely be less.
3. Chronic total health hazard index (THI) is the sum of the ratios of the average annual exposure level of each compound to the compound's reference exposure level (REL). Actual chronic THI will likely be less.
4. Acute THI is the sum of the ratios of the maximum one-hour exposure level of each compound to the compound's REL. Actual acute THI will likely be less.
5. APCD's HRA results are points of maximum impact. Maximum lifetime cancer risk was less than 10 in one million, chronic Total Hazard Index was less than 1 and acute Total Hazard Index was less than 1 at all residential, occupational, and commercial locations.

Table 3.6-4 AMBIENT BACKGROUND CONCENTRATIONS AT THE OTAY MESA-DONOVAN MONITORING STATION			
Air Pollutant	2016	2017	2018
Ozone (O₃)			
Max 1-Hour (ppm)	0.092	0.097	0.092
Days > CAAQS (0.09 ppm)	0	1	0
Max 8-Hour (ppm)	0.075	0.082	0.079
Days > NAAQS (0.070 ppm)	4	6	1
Days > CAAQS (0.070 ppm)	4	6	1
Particulate Matter (PM₁₀)			
Max Daily (µg/m ³)	79.0	69.0	55.0
Days > NAAQS (150 µg/m ³)	0	0	0
Days > CAAQS (50 µg/m ³)	9	4	3
Annual Average (µg/m ³)	31.3	26.9	26.2
Exceed CAAQS (20 µg/m ³)	Yes	Yes	Yes
Particulate Matter (PM_{2.5})			
Max Daily (µg/m ³)	42.1	42.7	50.8
Days > NAAQS (35 µg/m ³)	*	*	*
Annual Average (µg/m ³)	12.8	*	*
Exceed NAAQS (12 µg/m ³)	Yes	*	*
Exceed CAAQS (12 µg/m ³)	Yes	*	*
Nitrogen Dioxide (NO₂)			
Max 1-Hour (ppm)	0.067	0.074	0.054
Days > CAAQS (0.18 ppm)	0	0	0
Annual Average (ppm)	0.008	0.008	0.006
Exceed NAAQS (0.053 ppm)	No	No	No
Exceed CAAQS (0.030 ppm)	No	No	No

Sources: CARB 2019

> = exceeding; µg/m³ = micrograms per cubic meter; * = insufficient data

**Table 3.6-5
AMBIENT BACKGROUND CONCENTRATIONS
AT OTHER NEARBY MONITORING STATIONS**

Air Pollutant	2012	2013	2014	2015	2016
Ozone (O₃) - Chula Vista					
Max 1-Hour (ppm)	0.085	0.073	0.093	0.088	0.073
Days > CAAQS (0.09 ppm)	0	0	0	0	0
Max 8-Hour (ppm)	0.078	0.062	0.072	0.066	0.068
Days > NAAQS (0.075/0.070 ¹ ppm)	1	0	0	0	0
Days > CAAQS (0.070 ppm)	1	0	1	0	0
Particulate Matter (PM₁₀) – Chula Vista					
Max Daily (µg/m ³)	37.0	38.0	38.0	46.0	48.0
Days > NAAQS (150 µg/m ³)	0	0	0	0	0
Days > CAAQS (50 µg/m ³)	0	0	0	0	0
Annual Average (µg/m ³)	21.5	23.7	23.4	19.8	21.8
Exceed CAAQS (20 µg/m ³)	Yes	Yes	Yes	No	Yes
Particulate Matter (PM_{2.5}) – Chula Vista					
Max Daily (µg/m ³)	34.3	21.9	26.5	33.5	23.9
Days > NAAQS (35 µg/m ³)	0	0	0	0	0
Annual Average (µg/m ³)	10.2	9.5	9.3	8.4	8.7
Exceed NAAQS (12 µg/m ³)	No	No	No	No	No
Exceed CAAQS (12 µg/m ³)	No	No	No	No	No
Nitrogen Dioxide (NO₂) – Chula Vista					
Max 1-Hour (ppm)	0.057	0.057	0.055	0.049	0.054
Days > CAAQS (0.18 ppm)	0	0	0	0	0
Days > NAAQS (0.100 ppm)	0	0	0	0	0
Annual Average (ppm)	0.011	0.013	0.11	0.10	0.09
Exceed NAAQS (0.053 ppm)	No	No	No	No	No
Exceed CAAQS (0.030 ppm)	No	No	No	No	No
Carbon Monoxide (CO) Tijuana* or El Cajon**					
Max 8-Hour (ppm)	2.6*	2.8*	NM	NM	1.3**
Days > NAAQS (9 ppm)	0	0	-	-	0
Days > CAAQS (9.0 ppm)	0	0	-	-	0
Max 1-Hour (ppm)	3.39*	5.14*	NM	NM	1.618**
Days > NAAQS (35 ppm)	0	0	-	-	0
Days > CAAQS (20 ppm)	0	0	-	-	0
Sulfur Dioxide (SO₂)					
Max Daily Measurement (ppm)	NM	NM	NM	NM	0.06**
Days > CAAQS (0.04 ppm)	-	-	-	-	0
Lead (Pb) mg/m³	NM	NM	NM	NM	0.0084**

Sources: CARB 2017b (all pollutants except 1-hour CO and annual maximum for PM₁₀, PM_{2.5} and NO₂), and USEPA 2013 (1-hour CO, and annual maximums for PM₁₀, PM_{2.5} and NO₂)

> = exceeding; µg/m³ = micrograms per cubic meter; NM = No Measurement

¹ On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.