5.3 AIR QUALITY

5.3.1 Setting

5.3.1.1 Climate and Meteorology

Coastal San Luis Obispo County is characterized by mild weather throughout the year. Due to its location near the coast, the Pacific Ocean plays a key role in moderating temperatures. Summers are mild and often characterized by early morning and afternoon fogs. Winters are usually cool and wet with the rainy season extending from late November to early April.

The nearest climatic data station is located at the Santa Maria Airport, approximately 6 miles south of the project site. The minimum average temperature recorded at the Santa Maria Airport station from 1948 to 2004 is 38.6 degrees Fahrenheit in December. The maximum average temperature is 74.3 degrees Fahrenheit in September for the same period. The average annual rainfall, recorded from 1948 to 2004, is 12.85 inches at the Santa Maria Airport. Eighty-four percent of this rainfall occurs from November through March.

Airflow plays an important role in the movement and dispersion of air pollutants in the San Luis Obispo region. The speed and direction of local winds are controlled by 1) the location and strength of the Pacific High pressure system and other global patterns, 2) topographical factors, and 3) circulation patterns resulting from temperature differences between the land and sea.

During the spring and summer, when the Pacific High attains its greatest strength, onshore winds from the northwest generally prevail during the day. As evening approaches, onshore winds die down, and the wind direction reverses with weak winds flowing down the coastal mountains and valleys to form light easterly breezes.

In the fall, onshore surface winds decline and the marine layer grows shallow, allowing an occasional reversal to a weak offshore flow. This, along with the diurnal alteration of land-sea breeze circulation, can sometimes produce a "sloshing" effect. Under such conditions, pollutants may accumulate over the Pacific Ocean and subsequently be carried back onshore with the return of sea breezes.

In the atmosphere, air temperatures normally decrease as altitude increases. At varying distances above the earth's surface, however, a reversal of this temperature gradient can occur. Such a condition, which is called an inversion, is simply a warm layer of air over a layer of cooler air. Inversions can have the effect of limiting the vertical dispersion of air pollutants, trapping them near the earth's surface.

Several types of inversions are common to the San Luis Obispo area. Weak surface inversions are caused by radiational cooling of air in contact with the cold surface of the earth at night. In valleys and low lying areas, this condition is intensified by the addition of cold air flowing down from hills and pooling on valley floors. Surface inversions are common throughout the County during winter months, particularly on cold mornings. As the morning sun warms the earth and air near the ground, the inversion lifts, gradually dissipating throughout the day.

During the summer, subsidence inversions can occur when the summertime presence of the Pacific high pressure cell can cause the air mass aloft to sink. As the air descends, compressional heating warms the air to a higher temperature than the air below. This highly stable atmospheric conditioning can act as a nearly impenetrable lid to the vertical mixing of pollutants. Subsidence inversions can persist for one or more days, causing air stagnation and the buildup of pollutants.

5.3.1.2 Air Pollution Control

Air pollution control is administered on three governmental levels in the project area. The United States Environmental Protection Agency (EPA) has jurisdiction under the Federal Clean Air Act to develop Federal air quality standards and to require individual states to prepare State Implementation Plans (SIPs) to attain these standards.

The California Environmental Protection Agency, Air Resources Board (ARB) has jurisdiction under the California Health and Safety Code and the California Clean Air Act to develop California air quality standards, to require regional plans to attain these standards, and to coordinate the preparation by local air districts of plans required by both the Federal and State Clean Air Acts. ARB is also responsible for the development of state emission standards for mobile and stationary emission sources.

The San Luis Obispo County Air Pollution Control District (APCD) shares responsibility with the ARB for ensuring that all State and Federal ambient air quality standards are attained within the County. The APCD has jurisdiction under the California Health and Safety Code to develop emission standards (rules) for the County, issue air pollution permits, and require emission controls for stationary sources in the County. The APCD is also responsible for the attainment of State and Federal air quality standards in the County.

5.3.1.3 Air Quality Standards

Air quality standards are specific concentrations of pollutants that are used as thresholds to protect public health and the public welfare. The U.S. Environmental Protection Agency (EPA) has developed two sets of standards; one to provide an adequate margin of safety to protect human health and the second to protect the public welfare from any known or anticipated adverse effects. At this time, sulfur dioxide is the only pollutant for which the two standards differ.

ARB has developed air quality standards for California, which are generally lower in concentration than the Federal standards. California standards exist for ozone, carbon monoxide, nitrogen dioxide, PM_{10}, visibility, sulfates, lead, hydrogen sulfide and vinyl chloride.

In July 1997, EPA finalized new health-based ozone and particulate matter (PM) standards. However, due to several lawsuits the standards were not fully implemented until February 2001. The new Federal ozone standard is based on a longer averaging period (8-hour vs. 1-hour), recognizing that prolonged exposure is more damaging. The new Federal PM standard is based on finer particles (2.5 microns and smaller vs. 10 microns and smaller), recognizing that finer particles may have a higher residence time in the lungs and cause greater respiratory illness. In 2002, the ARB lowered the annual standards for PM_{10} and $PM_{2.5}$ in response to the Children's Environmental Health Protection Act. Table 5.3-1 lists the applicable State and Federal air quality standards.

Table 5.3-1. Ambient Air Quality Standards

Pollutant	Averaging Time	State Standard	Federal Standard
Ozone	1-Hour	0.09 ppm	--
	8-Hour	--	0.08 ppm
Carbon Monoxide (CO)	1-Hour	20 ppm	35 ppm
	8-Hour	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO_2)	1-Hour	0.25 ppm	--
Inhalable Particulate Matter ($PM_{2.5}$)	24-Hour	--	65 ug/m3
	Annual Arithmetic Mean	12 ug/m3	15 ug/m3
Inhalable Particulate Matter (PM_{10})	24-Hour	50 ug/m3	150 ug/m3
	Annual Arithmetic Mean	20 ug/m3	50 ug/m3
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	--
	24-Hour	0.04 ppm	0.14 ppm

5.3.1.4 Effects of Air Pollution

The primary chemical compounds that are considered pollutants emitted into or formed in the atmosphere include ozone, oxides of nitrogen, sulfur dioxide, hydrocarbons, carbon monoxide, and particulate matter.

Ozone is formed in the atmosphere through a complex series of chemical reactions generally requiring light as an energy source. Ozone is a pungent, colorless gas that is a strong irritant and attacks the respiratory system. Respiratory and cardiovascular diseases are aggravated by exposure to ozone. A healthy person exposed to high concentrations of ozone may experience nausea, dizziness, and burning in the chest. Ozone also damages crops and other vegetation.

Approximately 90% of the ozone in the earth's atmosphere is within the stratosphere. The stratosphere is a layer of the atmosphere directly above the troposphere, which is the lowest layer. Ozone in the stratosphere absorbs 97-99% of the sun's high frequency ultraviolet light that is potentially damaging to life on earth.

Oxides of nitrogen (NO_x) which are considered pollutants include nitric oxide (NO) and nitrogen dioxide (NO_2). NO is colorless and odorless and is generally formed by combustion processes combining atmospheric oxygen and nitrogen. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen in the atmosphere or at the emission source. Both NO and NO_2 are considered ozone precursors because they react with hydrocarbons and oxygen to produce ozone. Exposure to NO_2 may increase the potential for respiratory infections in children and cause difficulty in breathing even among healthy persons and especially among asthmatics.

Sulfur dioxide (SO_2) is a colorless, pungent, irritating gas which affects the upper respiratory tract. Sulfur dioxide may combine with particulate matter and settle in the lungs, causing damage to lung tissues. Sulfur dioxide may combine with water in the atmosphere to form sulfuric acid that may fall as acid rain, damaging vegetation.

Hydrocarbons include a wide variety of compounds containing hydrogen and carbon. Many hydrocarbons (known as reactive organic gases [ROG]) react with NO and NO_2 to form ozone. Generally, ambient hydrocarbon concentrations do not cause adverse health effects directly, but result in ozone formation.

Carbon monoxide (CO) is a colorless, odorless gas generally formed by incomplete combustion of hydrocarbon-containing fuels. Carbon monoxide does not irritate the respiratory tract, but does interfere with the ability of blood to carry oxygen to vital tissues.

Particulate matter consists of a wide variety of particle sizes and composition. Generally, particles less than 10 microns (PM_{10}) are considered to be pollutants because they accumulate in the lung tissues and may contain toxic materials which can be absorbed into the system. Smaller particulates ($PM_{2.5}$) may reside longer in lung tissue causing further damage.

5.3.1.5 Baseline Air Quality

San Luis Obispo County has been identified as a non-attainment area for ~~for both ozone (1-hour standard) and~~ PM_{10} by the ARB. San Luis Obispo County has been designated a non-attainment area for the State 1-hour ozone standard since 1988. However, on December 5, 2003 the ARB proposed re-designating the County as attainment because no ozone violations had been recorded during 2000-2003, and that the County should be treated separately than the rest of the South Central Coast Air Basin due to minimal ozone transport associated with intervening mountain ranges. The proposed re-designation was finalized in January 2004. Maximum concentrations of other criteria pollutants are currently within Federal and State standards.

Air quality in San Luis Obispo County is currently monitored at eight public agency and private sector monitoring stations located throughout the County. The nearest station is located in Nipomo approximately 3.5 miles northwest of the project site. This station monitors ozone, nitrogen dioxide, sulfur dioxide, and PM_{10} levels. Table 5.3-2 presents the maximum pollutant concentrations that were recorded at this station from 2001 through 2003.

High ozone levels in San Luis Obispo County have occasionally been traced to air pollutants transported from other air basins, such as the South Coast Air Basin, the San Francisco Bay Area, and the San Joaquin Valley. The frequency with which long-range transport of pollutants affects local air quality has not been definitively established. However, most exceedances of the State ozone standard measured in the County are the result of local emissions and adverse meteorology.

5.3.1.6 Air Quality Management

The California Clean Air Act (CCAA), adopted in 1988, requires all air pollution control districts and air quality management districts in the state to adopt and enforce regulations to achieve and maintain air quality that is within the State air quality standards. On January 22, 2004, the California Air Resources Board designated San Luis Obispo County to “Attainment” of the State Air Quality Standard for Ozone. This was accomplished through a 30% reduction in nitrogen oxides (NOx), 25% reduction in reactive organic gases (ROG), emission reductions through regulations, alternative transportation & grants elimination of over 45,000 vehicle trips per day, and elimination of 150,000 vehicle miles traveled per day. However, the County is considered a nonattainment area for the State PM10 standard.

Table 5.3-2. Summary of Air Quality Standard Exceedances

Year	2001	2002	2003
Ozone 1-hour (ppm)			
Worst Hour	0.085	0.080	0.097
Number of State Exceedances (Days > 0.09 ppm)	0	0	1
Ozone 8-hour (ppm)			
Worst 8-hour Period	0.080	0.069	0.076
Number of State Exceedances (Periods > 0.08 ppm)	0	0	0
PM_{10} (micrograms/cubic meter)			
Worst Sample	64	55	70
Number of State Exceedances (Samples>50)	3	2	3
Annual Mean (State Standard is 20, Federal is 50 ug/m3)	24.8	Not available	23.6

Source: California Air Resources Board (www.arb.ca.gov)

In response to the requirements of the CCAA, the San Luis Obispo County APCD prepared the 1991 Clean Air Plan (CAP) to provide a framework for the attainment of State air quality standards by the earliest practicable date. The CAP is a comprehensive planning document intended to facilitate attainment and maintenance of the State ozone standard. The 1995 CAP was developed as a comprehensive update to the 1991 CAP and was expected to bring the County into attainment of the State ozone standard by the end of 1997.

The 1995 CAP described the pollutants that affect County air quality, the sources of those pollutants, and future year emissions that are anticipated under current growth trends. Based on this information, the 1995 CAP also provides a control strategy for reducing emissions of ozone precursors. Included in the 1995 CAP are a number of land use and circulation management policies and programs that have already been implemented to reduce vehicular air emissions. Additional measures recommended for adoption include trip reduction programs and telecommuting.

A second update to the 1991 CAP was developed in 1998, as a continuation of the 1995 CAP and proposed no new control measures for adoption. The 1998 CAP was expected to bring the County into attainment with the State 1-hour ozone standard by 2003.

The CAP was revised again in 2001, but did not include any new emissions control measures. However, emissions of ROG and NOx were expected to decline through the year 2015, and attainment of the State ozone standard would occur in the near term. Due to the lack of recorded violations of the State 1-hour ozone standard, San Luis Obispo County was re-designated an attainment area in January 2004.

San Luis Obispo County is in attainment of the Federal air quality standards and is not subject to the planning requirements of the Federal Clean Air Act.

5.3.1.7 Existing Facilities

The project parcel currently supports a concrete and asphalt recycling facility, ready-mixed concrete plant and sand and gravel mine. These facilities generate fugitive dust emissions associated with materials handling and vehicle use on unpaved roads. Trucks and heavy equipment associated with materials handling and transportation of materials also generates exhaust emissions.

5.3.2 Impact Analysis

5.3.2.1 Thresholds of Significance

Significance thresholds have been developed by the San Luis Obispo County APCD and contained within the *CEQA Air Quality Handbook* (San Luis Obispo County APCD, 1997). Specifically, project emissions are considered significant impacts if any of the following thresholds are exceeded:

1. Operational Impacts:

Reactive Organic Gases (ROG), NO_x, SO_2, PM_{10}	10 lbs/day
CO	50 lbs/day

The APCD requires more stringent environmental review requirements for projects exceeding 25 lbs/day of ROG, NO_x, SO_2 and PM_{10} emissions, or 550 lbs/day CO emissions.

2. Construction Impacts:

ROG and NO_x	185 lbs/day or 2.5 tons/quarter
PM_{10}	2.5 tons/quarter

The APCD requires Best Available Control Technology for construction equipment (CBACT) for projects with ROG or NOx emissions between 2.5 and 6.0 tons per quarter and requires CBACT plus further mitigation for projects with emissions exceeding 6.0 tons per quarter.

3. Consistency:

Large projects must be found consistent with the District's Clean Air Plan (CAP). The APCD notes that a consistency analysis is required for the following types of projects: general plan updates and amendments, specific plans, area plans, large residential subdivisions and large commercial/industrial developments. The proposed project is not one of the types listed; therefore, a CAP consistency analysis is not required.

4. Health Risk:

The APCD has established health risk threshold values under the Air Toxics “Hot Spots” Information and Assessment Act. These values trigger community notification and a risk reduction plan.

Cancer Risk: 10 in a million lifetime cancer risk (continual 70 year exposure);

Non-Cancer Acute Hazard: acute hazard index greater than or equal to 1.0 (sum of acute hazard hourly index of each pollutant with similar adverse health effects); and

Non-Cancer Chronic Hazard: chronic hazard index greater than or equal to 1.0 (sum of chronic hazard annual index of each pollutant with similar adverse health effects).

5. Odors:

APCD Rule 402 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." Violation of Rule 402 is considered a significant impact.

5.3.2.2 Short-Term Asphalt Plant Impacts

Impact AQ-1: Construction activity would generate air emissions that may adversely impact local and regional air quality.

Discussion: The emissions of construction equipment and vehicles would be short-term and consist of fugitive dust and exhaust emissions. A peak day and peak quarter construction emissions inventory was prepared for comparison to the thresholds of significance. Equipment lists and activity levels provided by West Coast Environmental and Engineering (2003) were used to estimate emissions. Peak activity levels would occur for about one week during grading, activity and emissions levels would be less during the remainder of the construction period. West Coast Environmental and Engineering (2003) indicated that construction would require 3 to 4 months. Therefore, emissions from the entire construction period were totaled for comparison to the ton per quarter threshold.

Construction equipment emissions were estimated using emission factors from EPA documents *Compilation of Air Pollutant Emission Factors (AP-42)* (1995a) and *Nonroad Engine and Vehicle Emission Study* (1991). On-road vehicle emissions associated with construction worker transportation, water truck use and materials transportation were also estimated. Motor vehicle emissions were estimated using the ARB EMFAC2002 model using emission-specific data for San Luis Obispo County, summer 2004. The temperature input (75 degrees F) is consistent with the CEQA Air Quality Handbook (San Luis Obispo County Air Pollution Control District, 2003).

Fugitive dust emissions were also estimated based on equipment lists and activity levels provided by West Coast Environmental and Engineering (2003). Grading, scraping, unpaved road dust and wind erosion emissions were estimated using emission factors from Sections 11.9 and 13.2 of EPA (1995). It was assumed that wind erosion of the 5 acre plant site would occur throughout the construction period. Fugitive dust emissions estimates are based on the use of water trucks to minimize dust generation.

Construction emissions would exceed the APCD's quarterly significance threshold for PM_{10} and is considered a significant impact to regional air quality (see Table 5.3-3).

The existing concrete rubble piles may contain asbestos-cement pipe which is unacceptable for processing and recycling. Also, on-site structures and utilities may contain asbestos-containing materials. These materials must be properly abated prior to the commencement of demolition activities.

Impact Category: Significant but Mitigable

~~**Thresholds of Significance Criteria**: 2~~

Table 5.3-3. Construction Emissions

Pollutant	Units	Significance Threshold	Equipment	Vehicles	Fugitive Dust	Total
NOx	Pounds/peak day	185	122.7	2.4	0.0	**125.1**
	Tons/quarter	2.5	0.72	0.09	0.00	**0.81**
ROC	Pounds/peak day	185	9.1	0.3	0.0	**9.4**
	Tons/quarter	2.5	0.07	0.01	0.00	**0.08**
CO	Pounds/peak day	NA	62.2	5.1	0.0	**67.3**
	Tons/quarter	NA	0.32	0.20	0.00	**0.52**
PM10	Pounds/peak day	NA	7.2	0.0	353.0	**360.2**
	Tons/quarter	2.5	0.04	0.00	5.40	**5.44**

Thresholds of Significance Criteria: 2

Mitigation Measure AQ-1:

A. Dust Control Measures. Dust generated by construction activities shall be kept to a minimum by full implementation of the following measures.

- During clearing, grading, earth moving, excavation, or transportation of dust-containing materials (soil, aggregate, crushed concrete and asphalt), water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease;
- During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the morning and after work is completed for the day and whenever wind exceeds 15 miles per hour;
- Stockpiled earth material shall be sprayed as needed to minimize dust generation;
- During construction, the amount of disturbed area shall be minimized, and onsite vehicle speeds should be reduced to 15 mph or less;
- Exposed ground areas that are planned to be reworked at dates more than one month after initial grading should be sown with a fast-germinating native grass seed and watered until vegetation is established;
- After clearing, grading, earth moving, or excavation is completed, the entire area of disturbed soil shall be treated immediately by watering or revegetating or spreading soil binders to minimize dust generation until the area is paved or otherwise compacted so that dust generation is minimized;

- All heavy equipment and truck activity in unpaved areas shall be suspended when wind speeds exceed 20 mph (one hour average); and,
- All roadways associated with construction activities should be paved as soon as possible.

B. Asbestos Containing Materials. Any suspected asbestos-containing cement pipes observed within the existing concrete rubble piles shall be segregated by the operator and not processed on-site. Upon discovery of suspect asbestos-cement pipe, the San Luis Obispo APCD shall be immediately notified. The material shall be wrapped in plastic sheeting and disposed as asbestos waste in accordance with state and federal regulations.

Prior to demolition of any on-site buildings, the applicant shall complete a demolition asbestos survey prepared by a California-licensed asbestos consultant. The Asbestos Survey report shall be submitted to the San Luis Obispo County APCD along with an asbestos demolition notification pursuant to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) at least 10-days prior to initiation of demolition activities. Additionally, on-site utility pipes may be constructed with asbestos-cement pipe. These materials must be properly abated using a California-licensed asbestos abatement contractor and specially trained workers.

Residual Impacts

Fugitive dust emissions would be reduced below the threshold of significance; therefore, residual impacts would be less than significant.

5.3.2.3 Long-Term Asphalt Plant Impacts

Impact AQ-2: Operation of the proposed asphalt hot mix plant would result in NOx, ROG, CO, SO_2 and PM_{10} emissions that may adversely affect local and regional air quality.

Discussion: Emissions sources associated with the asphalt hot mix plant include:

- Exhaust emissions from the natural gas-fired burner used to dry the aggregate;
- Exhaust emissions from the natural gas-fired burner used to heat the asphalt oil;
- Exhaust emissions from on-site mobile equipment (wheeled loaders);
- Exhaust emissions from heavy-duty trucks used to transport aggregate, asphalt oil and asphalt product;
- Exhaust emissions from employee vehicles;
- Exhaust emissions from testing of three emergency generators (20 minutes per week);
- Evaporative ROG emissions from the hot asphalt from the dryer, mixer, hot bins, truck loading, silo filling and loaded trucks (in-transit); and,

- Dust emissions associated with aggregate handling, and truck and equipment use on unpaved roads.

Table 5.3-4 lists the assumptions used in estimating emissions from these sources. Asphalt plant emissions were calculated primarily using emissions factors from Section 11.1 of EPA (1995, updated 2004). For the purposes of emissions estimation, the proposed plant was considered a “batch mix” and not a “drum mix” because mixing of aggregate and asphalt oil would occur in a mixer and not in the dryer drum. A control efficiency of 50 percent for ROG and 98 percent for PM10 for the proposed blue smoke control system was applied to emissions from truck loading and silo filling. These values were taken from West Coast Environmental and Engineering (2003), as no other data were available. The values and emissions estimations are consistent with respect to APCD’s CEQA Air Quality Handbook, which provides guidance for assessing air quality impacts for projects subject to CEQA review.

Oil heater emissions were estimated using factors from Section 1.4 (Natural Gas Combustion) of EPA (1995). PM_{10} emissions associated with aggregate handling were estimated using factors from Sections 11.9 and 13.4 of EPA (1995). On-road vehicle emissions were estimated using summer 2004 for San Luis Obispo County from the EMFAC2002 model (April 2003 version). Emissions from emergency generator testing were estimated using manufacturer-supplied factors taken from West Coast Environmental and Engineering (2003). Emission calculations are documented in Appendix F.

Peak day and annual emissions for the asphalt hot mix plant are provided in Tables 5.3-5 through 5.3-8. Peak day emissions would exceed the daily significance threshold for NOx, ROG, CO, SO_2 and PM_{10} and are considered a significant impact. It should be noted that average daily emissions would be substantially less, but would exceed the thresholds. Annual PM_{10} emissions would also exceed the annual emissions threshold.

Impact Category: Significant but Mitigable

Thresholds of Significance Criteria: 1

Table 5.3-4. Assumptions used in Emissions Estimates

Parameter	Peak Day	Annual
Asphalt Production (tons)	6,000	400,000
Asphalt Transportation (round trips): 25 tons/trip	240	16,000
Asphalt Round Trip Length (miles): south, north, east	23.3	23.3
Aggregate Usage (tons)	5,640	376,000
Aggregate Transportation (round trips): 25 tons/trip	226	15,040
Aggregate Round Trip Length (miles): 90% from Sisquoc	29	29
Asphalt Oil Usage (tons)	360	24,000
Asphalt Oil Transportation (round trips): 25 tons/trip	15	960
Asphalt Oil Round Trip length (miles): Santa Maria Refinery	24	24

On-site mobile equipment (hours)	20	1515
Employee one-way trips	24	7272
Heavy-duty truck average speed (mph)	40	40
Employee vehicle average speed (mph)	50	50

Table 5.3-5. Asphalt Plant Operating Emissions

Pollutant	Units	Dryer Mixer	Load-out (1)	Silo Filling (1)	Transit	Oil Heater	Aggregate Handling	Unpaved Roads
NOx	Pounds/peak day	111.9	0.0	0.0	0.0	4.2	0.0	0.0
	Tons/year	3.74	0.00	0.00	0.00	1.41	0.00	0.00
ROG	Pounds/peak day	49.2	12.6	36.6	6.6	0.5	0.0	0.0
	Tons/year	1.64	0.42	1.22	0.22	0.02	0.00	0.00
CO	Pounds/peak day	2400.0	7.8	7.2	0.0	7.6	0.0	0.0
	Tons/year	80.00	0.26	0.24	0.00	0.25	0.00	0.00
PM10	Pounds/peak day	162.0	0.1	0.1	0.0	0.7	11.8	1201.9
	Tons/year	5.40	0.00	0.00	0.00	0.02	0.40	37.9
SO2	Pounds/peak day	27.6	0.0	0.0	0.0	0.1	0.0	0.0
	Tons/year	0.92	0.00	0.00	0.00	0.00	0.00	0.00

Notes: (1) Includes 50 percent ROG and 98 percent PM10 control from blue smoke control filters

Table 5.3-6. Mobile Source Emissions

Pollutant	Units	Incoming Aggregate	Incoming Asphalt Oil	Outgoing Product	Employee Vehicles	On-Site Equipment
NOx	Pounds/peak day	161.4	8.9	136.0	0.5	206.4
	Tons/year	5.37	0.28	4.53	0.07	7.82
ROG	Pounds/peak day	7.9	0.4	6.7	0.2	98.7
	Tons/year	0.26	0.01	0.22	0.04	0.68
CO	Pounds/peak day	29.9	1.6	25.2	4.6	18.0
	Tons/year	0.99	0.05	0.84	0.70	3.74
PM10	Pounds/peak day	0.7	0.0	0.6	0.0	13.5
	Tons/year	0.02	0.00	0.02	0.00	0.51

Table 5.3-7. Emergency Generator Emissions

Pollutant	Units	165 KW	600 KW (2)	Total
NOx	Pounds/peak day	0.64	7.30	7.94
	Tons/year	0.02	0.19	0.21
ROG	Pounds/peak day	0.08	0.19	0.27
	Tons/year	0.00	0.01	0.01
CO	Pounds/peak day	0.05	1.92	1.97
	Tons/year	0.00	0.05	0.05
PM10	Pounds/peak day	0.02	0.35	0.37
	Tons/year	0.00	0.01	0.01
Hours	Peak day	0.333	0.333	
	Annual	17.3	17.3	

Table 5.3-8. Emissions Summary

Pollutant	Units	Asphalt Plant	Mobile Sources	Emergency Generator	Total	Significance Threshold
NOx	Pounds/peak day	116.1	513.2	7.9	637.2	25
	Tons/year	5.15	18.07	0.21	23.43	25
ROG	Pounds/peak day	105.5	113.9	0.3	219.7	25
	Tons/year	3.52	1.21	0.01	4.74	25
CO	Pounds/peak day	2422.6	79.3	2.0	2503.9	550
	Tons/year	80.75	6.32	0.05	87.12	NA
PM10	Pounds/peak day	1376.6	14.8	0.4	1391.8	25
	Tons/year	43.72	0.55	0.01	44.28	25

Mitigation Measure AQ-2:

A. The asphalt plant site and all access roads shall be paved to minimize fugitive dust generation by mobile equipment and vehicles;

B. Provisions to spray down stockpiles and any other dust generating area/activity, shall be provided and utilized as needed to prevent off-site transport of fugitive dust;

C. A dust monitor shall be designated for each work shift to monitor site conditions, and shall order additional water spraying of roads, stockpiles and aggregate storage bins as needed to prevent off-site transport of fugitive dust. At a minimum, such watering shall be performed immediately when visible dust seen leaving the site. Water trucks shall be onsite from 1 pm to 6 pm when high winds are likely as well as when winds exceed 15 mph;

D. The asphalt plant shall utilize drum mix technology (instead of a separate mixer) to reduce CO emissions; and,

E. Project emissions, following implementation of Measures A through D above, shall be offset through the contribution to an off-site mitigation fund administered by APCD to finance regional emission reduction projects in the area. Off-site mitigation measures are designed to offset emissions from large projects that cannot be fully mitigated with on-site measures. Off-site emission reductions can result from either stationary or mobile sources, but should relate to the on-site impacts from the project in order to provide proper "nexus" for the air quality mitigation. For example, NOx emissions from increased vehicle trips from a large residential development could be reduced by funding the expansion of existing transit services. The off-site strategies identified below provide a range of options available to mitigate significant emissions impacts from large projects.

- Develop or improve park-and-ride lots;
- Retrofit existing homes in the project area with APCD-approved wood combustion devices;
- Retrofit existing homes in the project area with energy-efficient devices;

- Retrofit existing businesses in the project area with energy-efficient devices;
- Construct satellite worksites;
- Fund a program to buy and scrap older, higher emission passenger and heavy-duty vehicles;
- Replace/repower transit buses;
- Replace/repower heavy-duty diesel school vehicles (i.e. bus, passenger or maintenance vehicles);
- Fund an electric lawn and garden equipment exchange program;
- Retrofit or repower heavy-duty construction equipment, or on-road vehicles;
- Repower marine vessels;
- Repower or contribute to funding clean diesel locomotive main or auxiliary engines;
- Install bicycle racks on transit buses;
- Purchase particulate filters or oxidation catalysts for local school buses, transit buses or construction fleets;
- Install or contribute to funding alternative fueling infrastructure (i.e. fueling stations for CNG, LPG, conductive and inductive electric vehicle charging, etc.);
- Fund expansion of existing transit services;
- Fund public transit bus shelters;
- Subsidize vanpool programs;
- Subsidize transportation alternative incentive programs;
- Contribute to funding of new bike lanes;
- Install bicycle storage facilities; and,
- Provide assistance in the implementation of projects that are identified in city or county Bicycle Master Plans.

Residual Impacts

Measures A through D above would substantially reduce PM_{10} emissions, but emissions would remain greater than the threshold of significance. Measure D would reduce project CO emissions to approximately 884 pounds on a peak day, which would exceed the 550 pound per day threshold. Implementation of Measure E would offset project emissions, resulting in residual emissions below the threshold and considered less than significant.

Impact AQ-3: Toxic air contaminants contained with asphalt plant operation and diesel truck exhaust may result in unacceptable human health risk.

Discussion: The asphalt plant would emit hazardous air pollutants as defined by the U.S. EPA including acetylaldehyde, benzene, ethylbenzene, formaldehyde, quinone, toluene, xylenes, polycyclic aromatic hydrocarbons, arsenic, beryllium, cadmium, chromium, hexavalent chromium, lead, manganese, mercury, nickel, selenium, phenol, bromomethane, 2-butanone, carbon disulfide, chloroethane, chloromethane, cumene, ethylbenzene, hexane, isooctane, methylene chloride and styrene (EPA, 1995).

Transportation of aggregate, asphalt oil and asphalt product would be conducted using diesel-powered heavy-duty trucks. On-site mobile equipment would also burn diesel fuel. The combustion of diesel fuel by internal combustion engines produces exhaust containing a number of compounds that have been identified as hazardous air pollutants by the U.S. Environmental Protection Agency (EPA) and toxic air contaminants by the California Air Resources Board (ARB). These hazardous air pollutants include benzene, toluene, xylene, propylene, 1,3-butadiene, formaldehyde, acetylaldehyde, acrolein and polycyclic aromatic hydrocarbons.

Particulate matter (PM) from diesel exhaust has recently been identified as a toxic air contaminant, which has prompted ARB to develop a Final Risk Reduction Plan (released October 2000) for exposure to diesel PM. Based on ARB Resolution 00-30, full implementation of emission reduction measures recommended in the Final Risk Reduction Plan would result in a 75 percent reduction in the diesel PM Statewide inventory and the associated cancer risk by 2010, and an 85 percent reduction by 2020 in the diesel PM inventory and potential cancer risk.

If found in sufficient quantities, the combination of hazardous air pollutants from the asphalt plant, mobile equipment and trucks could result in an unacceptable health risk to nearby residences (closest ones are located approximately 900 feet north and 2,100 feet south of the site).

An air quality health risk assessment (HRA) and an Addendum to the HRA were~~as~~ prepared by West Coast Environmental and Engineering (WCE) (See Appendix F) for the proposed asphaltic concrete plant (West Coast Environmental 2005, 2007). The HRA presents toxic air contaminant (TAC) source identification, air dispersion modeling and risk calculation at residential receptors for equipment associated with operation of the proposed portable, stand-~~along~~alone, asphaltic concrete plant.

This HRA assessed identical production parameters as the Santa Paula HRA, which was published by WCE on May 25, 2004 and transmitted to Ventura APCD on September 30, 2004 (this HRA was recently approved by Ventura APCD). The Santa Paula HRA was prepared for an asphalt plant in Santa Paula, California, has the following similar characteristics as the proposed asphaltic concrete plant:

- Same annual throughput (400,000 tons per year);
- Located in a rural river valley with predominantly east-west winds; and,
- Residential receptors mostly located to the north and south at approximately the same distance as the proposed asphalt plant ~~-~~(approximately 1,000 to 2,500 feet).

The HRA for the Santa Paula plant addressed cancer risk, acute hazards and chronic hazards for all sources, including the dryer, asphalt heaters, evaporative emissions from hot asphalt, heavy equipment and heavy-duty trucks. The HRA looked at hazardous air pollutants, including acetylaldehyde, benzene, ethylbenzene, formaldehyde, quinone, toluene, xylenes, polycyclic aromatic hydrocarbons, arsenic, beryllium, cadmium, chromium, hexavalent chromium, lead, manganese, mercury, nickel, selenium, phenol, bromomethane, 2-butanone, carbon disulfide, chloroethane, chloromethane, cumene, ethylbenzene, hexane, isooctane, methylene chloride and styrene (EPA, 1995).

Findings of the Santa Paula HRA were incorporated by reference and used in the following ways:

- Cancer risk associated with diesel particulate matter (DPM) emissions from on-road and non-road emission sources was found to comprise 99% of the risk. The HRA for the proposed asphaltic concrete plant focused on calculation of cancer risk from DPM emissions from the plant;
- Acute and chronic hazard indices are an order of magnitude less than their significance thresholds. This HRA does not include an analysis of acute or chronic hazard indices though they are incorporated by reference from the Santa Paula HRA.

In the time between the Santa Paula HRA and this HRA, naphthalene was added to the California Air Resources Board (CARB) list of carcinogens. This HRA includes risk associated with naphthalene emissions from the asphalt plant dryer that were not included in the Santa Paula HRA.

The following emission sources were evaluated in the HRA for the proposed plant:

- Truck travel onsite and in route to U.S. Highway 101 interchange with State Road 166;
- Truck idling onsite;
- Non-road engines in mobile equipment operating onsite; and,
- Combustion of natural gas in the drum dryer and asphalt plant production.

The~~is~~ HRA Addendum ~~found~~ concluded that:

- With implementation of the proposed Condition of Approval, the 70-year cancer risk at the Maximum Exposed Individual (MEI) is less than then significance threshold of 10 in 1 million; and
- ~~Cancer risk is less than the significance level of 10 in 1 million at the nearest receptor; and,~~
- Acute and chronic hazard indices (HI) are below significance level of 1.0 HI at the nearest receptor[a].

Impact Category: Significant but Mitigable~~2~~

[a] ~~These findings have not been reviewed by APCD.~~

Thresholds of Significance Criteria: 4

Mitigation Measure AQ-3A: As part of permitting for the proposed asphalt plant generators (New Source Review), the APCD ~~would require~~required that the project proponent to complete a comprehensive facility-wide health risk assessment according to the Emission Inventory Criteria and Guidelines for the "Hot Spots" program. The Assessment ~~would include~~included a facility-wide inventory of toxic air contaminants, air dispersion modeling to determine ground-level concentrations at adjacent residences and application of unit risk factors to identify cancer and non-cancer health risk. ~~Should the results of the health risk assessment indicate unacceptable health risk, mitigation measures may be required to reduce health risk by reducing ground-level concentrations of toxic air contaminants, such as:~~

~~1.Limiting peak production rate which would reduce emissions from the asphalt plant, mobile equipment and trucks; and~~

~~2.~~1. ~~Installing a meteorological monitoring station and limiting asphalt production during periods when the predominant wind direction is north-south (transport emissions to residents of Nipomo or Santa Maria).~~

Mitigation Measure AQ-3B: The applicant shall use ultra low sulfur diesel in all on-site diesel fuel equipment.

Mitigation Measure AQ-3C: A "no idling" policy shall be prepared and submitted to the APCD for review and approval, prior to the start of construction for this project. The policy shall apply to both on-site diesel fuel equipment and haul trucks and limit idling of diesel fuel equipment to a maximum of five minutes.

Mitigation Measure AQ-3D: Project loaders shall be powered by engineers that are Tier 2 or better and equipped with add-on controls for diesel particulate matter. Add-on controls chosen shall be consistent with the highest level of ARB verified technology approved for use with the loaders at the time of issuance of a certificate of occupancy.

Residual Impacts

Health risk can feasibly be reduced below the threshold of significance; therefore, impacts are significant, but mitigable.

~~Increasing exhaust stack height of the steam generators to increase dispersion;~~**Impact AQ-4**. Hot asphalt generates odors and has the potential to be considered a nuisance, in violation of APCD Rule 402.

Discussion: The project incorporates Best Available Control Technology including a blue smoke control system (multi-pass filtration system for silo and truck loading), and an air scavenging system for the dryer and asphalt drag-out conveyor. These systems would remove most of the hot asphalt odors that would be generated. In addition, the nearest residence is located approximately ~~0.3~~800 ~~miles~~feet to the north. Therefore, odors are expected to be less than significant.

Impact Category: Insignificant

Thresholds of Significance Criteria: 5

Mitigation Measure: No mitigation is required above what use already proposed for the project. ~~Increasing exhaust stack height of the steam generators to increase dispersion;~~

5.3.2.4 LUO/LUE Amendment Impacts

Impact AQ-5. Generation of manufacturing-related air quality emissions.

Discussion: The proposed change in land use designation from RS to IND and CS to IND would result in the generation of manufacturing-related air quality emissions associated within industrial uses (e.g., chemical products or metal machinery manufacturing plant,). Such air quality emissions could adversely affect local and regional air quality and result in unacceptable human health risks.

Impact Category: Significant but Mitigable

Thresholds of Significance Criteria:1, 2

Mitigation Measure AQ-5: A project-specific air quality assessment study shall be conducted by a qualified air quality specialist at the time a new use is proposed~~-~~ within the LUO/LUE amendment area that exceeds established air quality thresholds or involves hazardous materials. The study shall quantify impacts to adjacent residences, and specify emission reduction measures to minimize air quality impacts to the extent feasible, as determined by the County. If necessary, the APCD may require the project proponent to complete a comprehensive facility-wide health risk assessment. All measures recommended by the air quality assessment, and the health risk assessment, if required, shall be fully implemented. Such measures may include, but are not limited to, the following:

~~A.~~ • Paving the project site and all access roads;

- Minimizing fugitive dust;
- Possible contribution to an off-site mitigation fund to finance regional emission reduction projects, such as bikeways, diesel bus conversions, agricultural engine replacements and similar activities; and,
- Limiting peak production rates.

Residual Impacts

With the incorporation of mitigation, impacts would be less than significant.

5.3.2.5 Cumulative Impacts

As discussed in Section 8.2 of this EIR, cumulative projects include the Troesh Land Use Ordinance Amendment, which includes receipt, processing, storage and sales of green waste. This project would generate emissions from on-site mobile equipment and vehicles used to transport green waste. The Caldwell and Loomis projects would generate vehicle emissions associated with materials and employee transportation. The contribution of the proposed project to regional air emissions of the cumulative projects would be considerable. However, these cumulative impacts would not alter the significance of air quality impacts of the project.

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