Air Quality Assessment For:
WEST VALLEY SPECIFIC PLAN AMENDMENT CITY OF COLTON

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1.0 Existing Air Quality

1.1 Project Description

The West Valley Specific Plan Amendment (WVSPA) project consists of revising and amending a portion of the West Subarea of the existing West Valley Specific Plan (WVSP), while the East Subareas will remain unaffected by this amendment. Of the West Subarea, approximately 373 acres of the total 476 acres is affected by this amendment. Under the WVSPA, a variety of land uses were planned, including a mix of residential and non-residential uses. Residential uses will include both single family and multiple family dwelling units. Non-residential uses will consist of retail uses, including a proposed hotel, a variety of office/business park uses, as well as a school site and open space/parks. The vicinity map is presented in Exhibit 1. The land use plan is illustrated in Exhibit 2.

This report analyzes the potential air quality impacts associated with this project. Regional air quality impacts from construction and operation of the proposed project are analyzed, as are potential local air quality impacts.

1.2 Local, State, and Federal Air Quality Agencies

The proposed project is located in the South Coast Air Basin (SCAB). The SCAB is comprised of parts of Los Angeles, Riverside and San Bernardino counties and all of Orange County. The basin is bounded on the west by the Pacific Ocean and surrounded on the other sides by mountains. To the north lie the San Gabriel mountains, to the north and east the San Bernardino Mountains, to the southeast the San Jacinto Mountains and to the south the Santa Ana Mountains. The basin forms a low plain and the mountains channel and confine air flow which trap air pollutants.

The primary agencies responsible for regulations to improve air quality in the SCAB are the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB). The Southern California Association of Governments (SCAG) is an important partner to the SCAQMD, as it is the designated metropolitan planning authority for the area and produces estimates of anticipated future growth and vehicular travel in the basin which are used for air quality planning. The SCAQMD sets and enforces regulations for non-vehicular sources of air pollution in the basin and works with SCAG to develop and implement Transportation Control Measures (TCM). TCM measures are intended to reduce and improve vehicular travel and associated pollutant emissions.

CARB was established in 1967 by the California Legislature to attain and maintain healthy air quality, conduct research into the causes and solutions to air pollution, and systematically attack the serious problem caused by motor vehicles, which are the major causes of air pollution in the State. CARB sets and enforces emission standards for motor vehicles, fuels, and consumer products. It sets the health based California Ambient Air Quality Standards (CAAQS) and monitors air quality levels throughout the state. The board identifies and sets control measures for toxic air contaminants. The board also performs air quality related research, provides compliance assistance for businesses, and produces education and outreach programs and materials. CARB provides assistance for local air quality districts, such as SCAQMD.

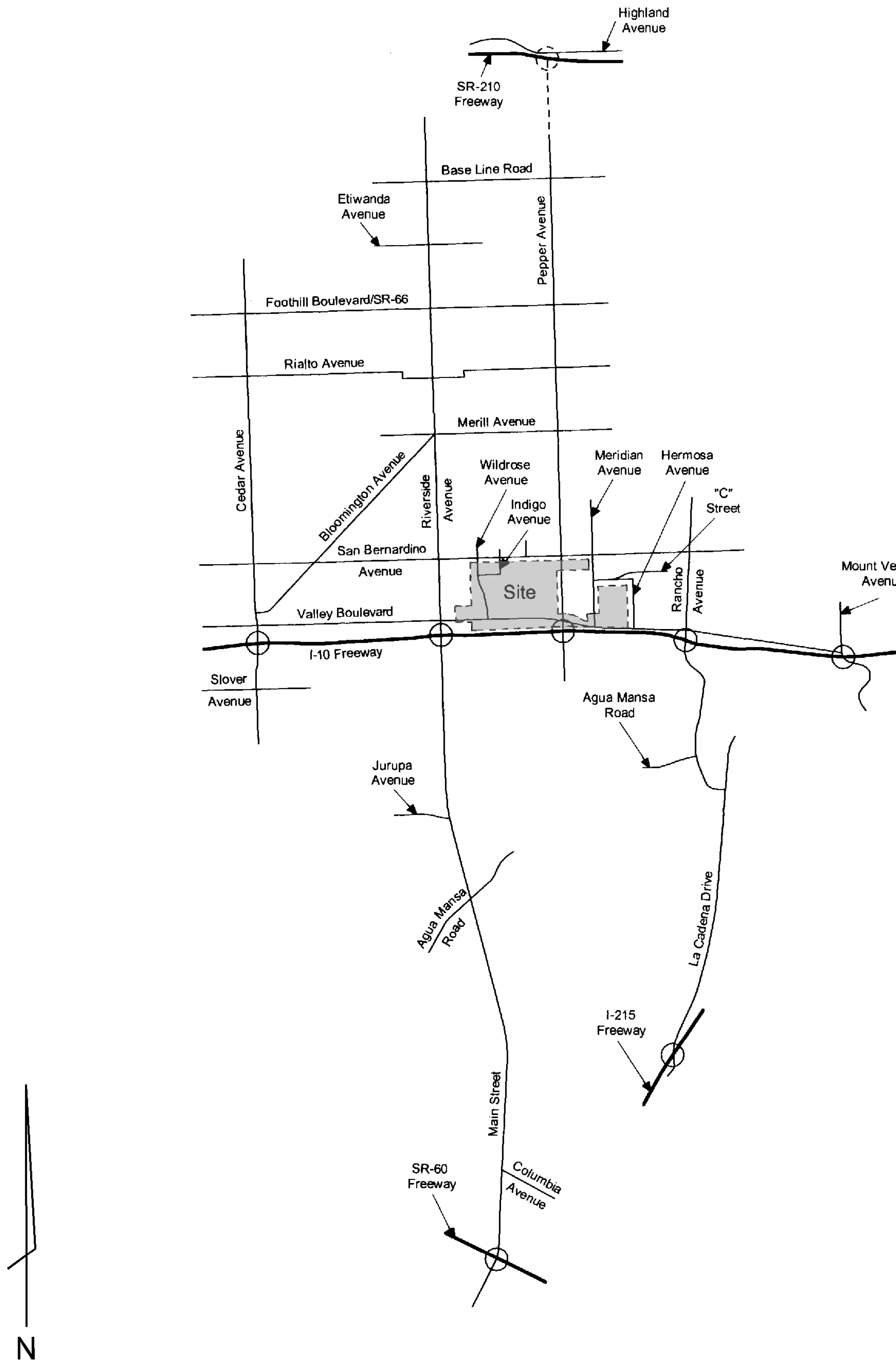

Exhibit 1
Vicinity Map

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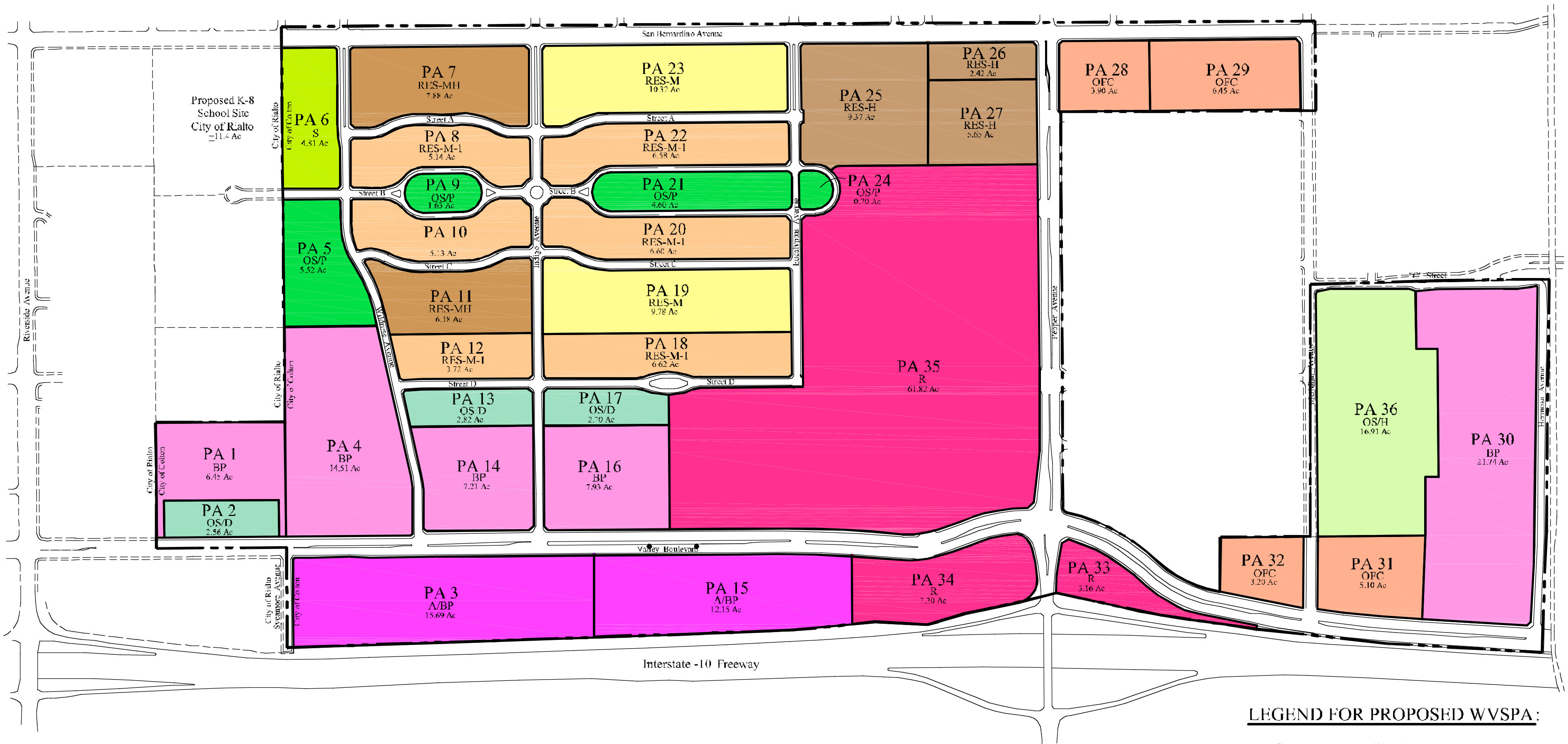

LEGEND FOR PROPOSED WVSPA:

RES-M	(Medium)
RES-M-1	(Medium 1)
RES-MH	(Medium High)
RES-H	(High)
R	Retail
BP	Business Park
A/BP	Auto / Business Park
OFC	Office
OS/P	Open Space / Park
OS/D	Open Space / Detention
OS/H	Open Space / Habitat
S	School

Proposed WVSPA Land Use Plan

Note: WVSPA = West Valley Specific Plan Amendment

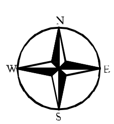

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Exhibit 2
Site Plan

The U.S. Environmental Protection Agency (U.S. EPA) is the primary federal agency for regulating air quality. The EPA implements the provisions of the Federal Clean Air Act (FCAA). This Act establishes national ambient air quality standards (NAAQS) that are applicable nationwide. The EPA designates areas with pollutant concentrations that do not meet the NAAQS as non-attainment areas for each criteria pollutant. States are required by the FCAA to prepare State Implementation Plans (SIP) for designated non-attainment areas. The SIP is required to demonstrate how the areas will attain the NAAQS by the prescribed deadlines and what measures will be required to attain the standards. The EPA also oversees implementation of the prescribed measures. Areas that achieve the NAAQS after a non-attainment designation are redesignated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the NAAQS.

The CCAA required all air pollution control districts in the state to prepare a plan prior to December 31, 1994 to reduce pollutant concentrations exceeding the CAAQS and ultimately achieve the CAAQS. The districts are required to review and revise these plans every three years. The SCAQMD satisfies this requirement through the publication of an Air Quality Management Plan (AQMP). The AQMP is developed by SCAQMD and SCAG in coordination with local governments and the private sector. The AQMP is incorporated into the SIP by CARB to satisfy the FCAA requirements discussed above. The AQMP is discussed further in Section 1.5.

1.3 Criteria Pollutants, Health Effects, and Standards

Under the Federal Clean Air Act (FCAA), the U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for six major pollutants; ozone (O_3), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. These six air pollutants are often referred to as the criteria pollutants. The NAAQS are two tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property).

Under the California Clean Air Act (CCAA), the California Air Resources Board have established California Ambient Air Quality Standards (CAAQS) to protect the health and welfare of Californians. State standards have been established for the six criteria pollutants as well as four additional pollutants; visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

Table 1 presents the state and national ambient air quality standards. A brief explanation of each pollutant and their health effects is presented follows.

Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	State Standards[1,3]	Federal Standards[2] Primary[3,5]	Secondary[3,6]
Ozone (O_3)[9]	1 Hour	0.09 ppm (180 $\mu g/m^3$)	--	--
	8 Hour	0.070 ppm (137 $\mu g/m^3$)	0.075 ppm (147 $\mu g/m^3$)	Same as Primary
Respirable Particulate Matter (PM_{10})[8]	24 Hour	50 $\mu g/m^3$	150 $\mu g/m^3$	Same as Primary
	AAM[6]	20 $\mu g/m^3$	--	Same as Primary
Fine Particulate Matter ($PM_{2.5}$)[8]	24 Hour	--	35 $\mu g/m^3$	Same as Primary
	AAM[6]	12 $\mu g/m^3$	15 $\mu g/m^3$	Same as Primary
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	--	--
Nitrogen Dioxide (NO_2)	AAM[6]	0.030 ppm (56 $\mu g/m^3$)	0.053 ppm (100 $\mu g/m^3$)	Same as Primary
	1 Hour	0.18 ppm (438 $\mu g/m^3$)	--	--
Sulfur Dioxide (SO_2)	AAM[6]	--	0.030 ppm (80 $\mu g/m^3$)	--
	24 Hour	0.04 ppm (105 $\mu g/m^3$)	0.14 ppm (365 $\mu g/m^3$)	--
	3 Hour	--	--	0.5 ppm (1,300 $\mu g/m^3$)
	1 Hour	0.25 ppm (655 $\mu g/m^3$)	--	--
Lead[7]	30 day Avg.	1.5 $\mu g/m^3$	--	--
	Calendar Quarter	--	1.5 $\mu g/m^3$	Same as Primary
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per km -- visibility ≥ 10 miles (0.07 per km -- ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 $\mu g/m^3$		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu g/m^3$)		
Vinyl Chloride[7]	24 Hour	0.01 ppm (26 $\mu g/m^3$)		

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.
2. National standards (other than ozone, $PM_{10,}$ $PM_{2.5}$,, 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 PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ 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 U.S. EPA 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. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. Annual Arithmetic Mean
7. The ARB 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.
8. On September 21, 2006 EPA revoked the annual 50 $\mu g/m^3$ PM_{10} standard and lowed the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$. Attainment designations are to be issued by November, 2009 with attainment plans due April, 2013.
9. On March 12, 2008 EPA lowered the 8-hour Ozone standard to 0.075 ppm from 0.08 ppm. Attainment designations are to be issued by March 2010 with attainment plans due by March, 2013

-- No Standard

1.3.1 Ozone (O_3)

Ozone is a secondary pollutant; it is not directly emitted. Ozone is the result of chemical reactions between volatile organic compounds (VOC) (also referred to as reactive organic gasses (ROG)) and nitrogen oxides (NO_x), which occur only in the presence of bright sunlight. Sunlight and hot weather cause ground-level ozone to form in the air. As a result, it is known as a summertime air pollutant. Ground-level ozone is the primary constituent of smog. Because ozone is formed in the atmosphere, high concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when ozone levels are unhealthy. Numerous scientific studies have linked ground-level ozone exposure to a variety of problems, including:

- lung irritation that can cause inflammation much like a sunburn;
- wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities;
- permanent lung damage to those with repeated exposure to ozone pollution; and
- aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Ground-level ozone can have detrimental effects on plants and ecosystems. These effects include:

- interfering with the ability of sensitive plants to produce and store food, making them more susceptible to certain diseases, insects, other pollutants, competition and harsh weather;
- damaging the leaves of trees and other plants, negatively impacting the appearance of urban vegetation, national parks, and recreation areas; and
- reducing crop yields and forest growth, potentially impacting species diversity in ecosystems.

1.3.2 Particulate Matter (PM_{10} & $PM_{2.5}$)

Particulate matter includes both aerosols and solid particles of a wide range of size and composition. Of particular concern are those particles smaller than 10 microns in size (PM_{10}) and smaller than or equal to 2.5 microns ($PM_{2.5}$). The size of the particulate matter is referenced to the aerodynamic diameter of the particulate. Smaller particulates are of greater concern because they can penetrate deeper into the lungs than large particles.

The principal health effect of airborne particulate matter is on the respiratory system. Short-term exposures to high $PM_{2.5}$ levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposures to high $PM_{2.5}$ levels are associated with premature mortality and development of chronic respiratory disease. Short-term exposures to high PM10 levels are associated with hospital admissions for cardiopulmonary diseases, increased respiratory symptoms and possible premature mortality. The EPA has concluded that available evidence does not suggest an association between long-term exposure to PM_{10} at current ambient levels and health effects.

$PM_{2.5}$ is directly emitted in combustion exhaust and formed from atmospheric reactions between of various gaseous pollutants including nitrogen oxides (NO_x) sulfur oxides (SO_x) and volatile organic compounds (VOC). PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or the re suspension of dusts most typically through construction activities and vehicular travels. $PM_{2.5}$ can remain suspended in the atmosphere for days and weeks and can be transported long distances. PM_{10} generally settles out of the atmosphere rapidly and are not readily transported over large distances.

1.3.3 Carbon Monoxide (CO)

Carbon monoxide is a colorless and odorless gas, which in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Carbon monoxide combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High carbon monoxide concentrations can lead to headaches, aggravation of cardiovascular disease, and impairment of central nervous system functions. Carbon monoxide concentrations can vary greatly over comparatively short distances. Relatively high concentrations are typically found near crowded intersections, along heavily used roadways carrying slow-moving traffic, and at or near ground level. Even under the most severe meteorological and traffic conditions, high concentrations of carbon monoxide are limited to locations within a relatively short distance (i.e., up to 600 feet or 185 meters) of heavily traveled roadways. Overall carbon monoxide emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

1.3.4 Nitrogen Dioxide (NO_2)

Nitrogen gas, normally relatively inert (unreactive), comprises about 80% of the air. At high temperatures (i.e., in the combustion process) and under certain other conditions it can combine with oxygen, forming several different gaseous compounds collectively called nitrogen oxides (NO_x). Nitric oxide (NO) and nitrogen dioxide (NO_2) are the two most important compounds. Nitric oxide is converted to nitrogen dioxide in the atmosphere. Nitrogen dioxide (NO_2) is a red-brown pungent gas. Motor vehicle emissions are the main source of NO_x in urban areas.

Nitrogen dioxide is toxic to various animals as well as to humans. Its toxicity relates to its ability to form nitric acid with water in the eye, lung, mucus membrane and skin. In animals, long-term exposure to nitrogen oxides increases susceptibility to respiratory infections lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO_2 can suffer lung irritation and potentially, lung damage. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

NO_x is a combination of primarily NO and NO_2. While the NAAQS only addresses NO_2, NO and the total group of nitrogen oxides is of concern. NO and NO_2 are both precursors in the formation of ozone and secondary particulate matter as discussed in Sections 1.3.1 and 1.3.2.

Because of this and that NO emissions largely convert to NO_2, NO_x emissions are typically examined when assessing potential air quality impacts.

1.3.5 Sulfur Dioxide (SO_2)

Sulfur oxides (SO_x) constitute a class of compounds of which sulfur dioxide (SO_2) and sulfur trioxide (SO_3) are of greatest importance. Ninety-five percent of pollution related SO_x emissions are in the form of SO_2. SO_x emissions are typically examined when assessing potential air quality impacts of SO_2. Combustion of fossil fuels for generation of electric power is the primary contributor of SO_x emissions. Industrial processes, such as nonferrous metal smelting, also contribute to SO_x emissions. SO_x is also formed during combustion of motor fuels. However, most of the sulfur has been removed from fuels greatly reducing SO_x emissions from vehicles.

SO_2 combines easily with water vapor, forming aerosols of sulfurous acid (H_2SO_3), a colorless, mildly corrosive liquid. This liquid may then combine with oxygen in the air, forming the even more irritating and corrosive sulfuric acid (H_2SO_4). Peak levels of SO_2 in the air can cause temporary breathing difficulty for people with asthma who are active outdoors. Longer-term exposures to high levels of SO_2 gas and particles cause respiratory illness and aggravate existing heart disease. SO_2 reacts with other chemicals in the air to form tiny sulfate particles which are measured as $PM_{2.5}$. The heath effects of $PM_{2.5}$ are discussed in Section 1.3.2.

1.3.6 Lead (Pb)

Lead is a stable compound, which persists and accumulates both in the environment and in animals. In humans, it affects the blood-forming or hematopoletic, the nervous, and the renal systems. In addition, lead has been shown to affect the normal functions of the reproductive, endocrine, hepatic, cardiovascular, immunological, and gastrointestinal systems, although there is significant individual variability in response to lead exposure. Since 1975, lead emissions have been in decline due in part to the introduction of catalyst-equipped vehicles, and decline in production of leaded gasoline. In general, an analysis of lead is limited to projects that emit significant quantities of the pollutant (i.e. lead smelters) and are not applied to transportation projects.

1.3.7 Visibility Reducing Particulates

Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The Statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. A separate standard for visibility-reducing particles that is applicable only in the Lake Tahoe Air Basin is based on reduction in scenic quality.

1.3.8 Sulfates(SO_4^{2-})

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and / or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO_2) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The ARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

1.3.9 Hydrogen Sulfide (H_2S)

Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. It can also be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H_2S at levels above the standard will result in exposure to a very disagreeable odor. In 1984, an ARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance.

1.3.10 Vinyl Chloride (Chloroethene)

Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes in liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer in humans.

1.4 South Coast Air Basin Air Quality Attainment Designations

Based on monitored air pollutant concentrations, the U.S. EPA and CARB designate areas relative to their status in attaining the NAAQS and CAAQS respectively. Table 2 lists the current attainment designations for the SCAB. For the Federal standards, the required attainment date is also shown. The Unclassified designation indicates that the air quality data for the area does not support a designation of attainment or nonattainment.

Table 2
Designations of Criteria Pollutants for the SCAB

Pollutant	Federal	State
Ozone (O_3)	Severe-17 Nonattainment (2021)	Nonattainment
Respirable Particulate Matter (PM_{10})	Serious Nonattainment (2006)	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment (2015)	Nonattainment
Carbon Monoxide (CO)	Attainment/Maintenance (2000)	Attainment
Nitrogen Dioxide (NO_2)	Attainment/Maintenance (1995)	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Attainment	Attainment
Visibility Reducing Particles	n/a	Unclassified
Sulfates	n/a	Unclassified
Hydrogen Sulfide	n/a	Attainment
Vinyl Chloride	n/a	Attainment

Table 2 shows that the U.S. EPA has designated SCAB as Severe-17 non-attainment for ozone, serious non-attainment for PM_{10}, non-attainment for $PM_{2.5}$, and attainment/maintenance for CO and NO_2. The basin has been designated by the state as non-attainment for ozone, PM_{10}, and $PM_{2.5}$. For the federal designations, the qualifiers, Severe-17 and Serious, affect the required attainment dates as the federal regulations have different requirements for areas that exceed the standards by greater amounts at the time of attainment/non-attainment designation. The SCAB is designated as in attainment of the Federal SO_2 and lead NAAQS as well as the state CO, NO_2, SO_2, lead, hydrogen sulfide, and vinyl chloride CAAQS.

In July 1997, U.S. EPA issued a new ozone NAAQS of 0.08 ppm using an 8-hour averaging time. Implementation of this standard was delayed by several lawsuits. Attainment/non-attainment designations for the new 8-hour ozone standard were issued on April 15, 2004 and became effective on June 15, 2005. The SCAB was designated severe-17 non-attainment, which requires attainment of the Federal Standard by June 15, 2021. As a part of the designation, the EPA announced that the 1-hour ozone standard would be revoked in June of 2005. Thus, the 8-hour ozone standard attainment deadline of 2021 supersedes and replaces the previous 1-hour ozone standard attainment deadline of 2010.

The SCAQMD and CARB are requesting that U.S. EPA change the nonattainment status of the 8-hour ozone standard to extreme, which would extend the attainment date by three years to 2024. This is discussed further in Section 1.5.

On March 12, 2008, U.S. EPA announced that it was lowering the 8-hour average NAAQS for ozone to 0.075 ppm. Attainment/non-attainment designations for the revised standard are to be issued by March 2009 with attainment plans due by March 2013. Non-attainment areas will be required to meet the standards by deadlines that may vary based on the severity of the problem in the area that will be determined at time of attainment/non-attainment designation.

On April 28, 2005, CARB adopted an 8-hour ozone standard of 0.070 ppm. The California Office of Administrative Law approved the rulemaking and filed it with the Secretary of State on April 17, 2006. The standard became effective on May 17, 2006. California has retained the 1-hour concentration standard of 0.09 ppm. To be redesignated as attainment by the state the basin will need to achieve both the 1-hour and 8-hour ozone standards.

The SCAB was designated as moderate non-attainment of the PM_{10} standards when the designations were initially made in 1990 with a required attainment date of 1994. In 1993, the basin was redesignated as serious non-attainment with a required attainment date of 2006 because it was apparent that the basin could not meet the PM_{10} standard by the 1994 deadline. As of 2006, the Basin had met the federal PM_{10} standards at all monitoring stations except the western Riverside where the annual PM_{10} standard had not been met. However, on September 21, 2006, the U.S. EPA announced that it was revoking the annual PM_{10} standard as research had indicated that there were no considerable health effects associated with long-term exposure to PM_{10}. With this change, the basin is technically in attainment of the federal PM_{10} standards although the redesignation process has not yet begun.

In July 1997, U.S. EPA issued NAAQS for fine particulate matter ($PM_{2.5}$). The $PM_{2.5}$ standards include an annual standard set at 15 micrograms per cubic meter ($\mu g/m^3$), based on the three-year average of annual mean $PM_{2.5}$ concentrations and a 24-hour standard of 65 $\mu g/m^3$, based on the three-year average of the 98th percentile of 24-hour concentrations. Implementation of these standards was delayed by several lawsuits. On January 5, 2005, EPA took final action to designate attainment and nonattainment areas under the NAAQS for $PM_{2.5}$ effective April 5, 2005. The SCAB was designated as non-attainment with an attainment required as soon as possible but no later than 2010. EPA may grant attainment date extensions of up to five years in areas with more severe $PM_{2.5}$ problems and where emissions control measures are not available or feasible. It is likely that the SCAB will need this additional time to attain the standard

On September 21, 2006, the U.S. EPA announced that the 24-hour $PM_{2.5}$ standard was lowered to 35 $\mu g/m^3$. Attainment/non-attainment designations for the revised $PM_{2.5}$ standard will be made by December of 2009 with an attainment date of April 2015 although an extension of up to five years could be granted by the U.S. EPA.

The Federal attainment deadline for CO was to be December 31, 2000 but at that time the basin still had measured exceedances of the CO NAAQS. The basin was granted an extension to attain the standard and has not had any violations of the federal CO standards since 2002. In March 2005, the South Coast AQMD adopted a CO Redesignation Request and Maintenance Plan. On May 11, 2007, the U.S. EPA announced approval of the Redesignation Request and Maintenance Plan and that, effective June 11, 2007, the SCAB would be re-designated as attainment/maintenance for the federal CO NAAQS. The plan provides for maintenance of the federal CO air quality standard until at least 2015 and commits to revising the Plan in 2013 to ensure maintenance through 2025.

The federal annual NO_2 standard was met for the first time in 1992 and has not been exceeded since. The SCAB was redesignated as attainment for NO_2 in 1998. The basin will remain a maintenance/attainment area until 2018, assuming the NO_2 standard is not exceeded.

Table 2 shows that SCAB is designated as in attainment of the SO_2 and lead NAAQS as well as the state CO, NO_2, SO_2, lead, hydrogen sulfide, and vinyl chloride CAAQS. Generally, these pollutants are not considered a concern in the SCAB.

1.5 Air Quality Management Plan (AQMP)

As, discussed above the CAA requires plans to demonstrate attainment of the NAAQS for which an area is designated as nonattainment. Further, the CCAA requires SCAQMD to revise its plan to reduce pollutant concentrations exceeding the CAAQS every three years. In the SCAB, SCAQMD and SCAG, in coordination with local governments and the private sector, develop the Air Quality Management Plan (AQMP) for the air basin to satisfy these requirements. The AQMP is the most important air management document for the basin because it provides the blueprint for meeting state and federal ambient air quality standards.

The l997 AQMP with the 1999 amendments is the current Federally approved applicable air plan for ozone. The successor 2003 AQMP was adopted locally on August 1, 2003, by the governing board of the SCAQMD. CARB adopted the plan as part of the California State Implementation Plan on October 23, 2003. The PM_{10} attainment plan from the 2003 AQMP received final approval from the U.S. EPA on November 14, 2005 with an effective date of December 14, 2005. As of February 14, 2007 the U.S. EPA had not acted on the ozone attainment plan of the 2003 AQMP. On this date, CARB announced that it was rescinding the ozone attainment plan from the 2003 AQMP with the intention to expedite approval of the 2007 AQMP. The 2007 AQMP was adopted by the SCAQMD on June 1, 2007. CARB adopted the plan as a part of the California State Implementation Plan on September 27, 2007. The State Implementation Plan was submitted to the U.S. EPA on November 16, 2007. The U.S. EPA has not taken action on the 2007 AQMP at this time.

The 2007 AQMP was prepared in response to the implementation of the federal $PM_{2.5}$ and 8-hour ozone NAAQS. The implementation of the new standards required completion of plan addressing attainment of the 8-hour ozone standard by June of 2007 and completion of a plan addressing the $PM_{2.5}$ standard one year later, in April of 2008. SCAQMD determined that it was most prudent to prepare an integrated plan to address both pollutants. The attainment date for the $PM_{2.5}$ NAAQS is earlier (i.e., 2015) than the attainment date for the ozone NAAQS (i.e., 2021) and the district felt that delaying a plan for $PM_{2.5}$ by a year could jeopardize the basin's ability to attain the standard. Further, development of a plan for ozone would have likely focused on lowering VOC emissions, which would have no effect on $PM_{2.5}$ levels. Reductions in NO_x emissions result in reductions in both ozone and $PM_{2.5}$ levels.

The 2007 AQMP demonstrates attainment of the 65 $\mu g/m^3$ 24-hour average and 15$\mu g/m^3$ annual average $PM_{2.5}$ standard by the 2015 deadline. However, it should be noted that in September of 2006, the U.S. EPA lowered the 24-hour $PM_{2.5}$ NAAQS to 35 $\mu g/m^3$. An attainment plan for the revised standard will need to be completed by 2013. The deadline for meeting the revised standard will not change (i.e., April 2015) but five year extensions to attain the standard may be granted by the U.S. EPA.

The 2007 AQMP determined that the basin would not be able to achieve the 0.08-ppm 8-hour ozone standard by the 2021 deadline without the use of "black box" measures. "Black box" measures anticipate the development of new technologies or improving existing control technologies that are not well defined at the time the plan is prepared. However, the use of "black box" measures is not allowed for areas with a Severe-17 non-attainment designation. Because of this the SCAQMD and CARB have submitted a request to the U.S. EPA to "bump up" the basin's classification to Extreme. This will extend the required attainment date to 2024 and allow the use of "black box" measures. The "black box:" reductions needed for ozone attainment are estimated to be 190 tons per day (tpd) of NO_x and 27 tpd. These reductions represent a 17% reduction in 2002 average daily NO_x emissions and a 3% reduction in 2002 average daily VOC emissions.

It should be noted that on March 12, 2008, the U.S. EPA lowered the 8-hour ozone standard to 0.075 ppm. This effectively lowers the standard 0.009 ppm as 0.084 ppm is considered meeting the 0.08 ppm standard. A plan to attain the revised standard will need to be completed by 2013. Attainment deadlines for the revised standard have not been established and may vary depending on the severity of the exceedances.

Implementation of the 2007 AQMP is based on a series of control measures and strategies that vary by source type (i.e., stationary or mobile) as well as by the pollutant that is being targeted. Short-term and mid-term control measures are defined to achieve the $PM_{2.5}$ standard by 2015. These measures are designed to also contribute to reductions in ozone levels. Additional, long-term measures are defined to attain the 8-hour ozone standard by 2024. The measures rely on actions to be taken by several agencies that have statutory authority to implement such measures. Each control measure will be brought for regulatory consideration in a specified time frame. Control measures deemed infeasible will be substituted by other measures to achieve the total emission reduction target for each agency.

The plan focuses on control of sulfur oxides (SO_x), directly emitted $PM_{2.5}$, and nitrogen oxides (NO_x) to achieve the $PM_{2.5}$ standard. Achieving the 8-hour ozone standard builds upon the $PM_{2.5}$ attainment strategy with additional NO_x and VOC reductions. The control measures in the 2007 AQMP are based on facility modernization, energy efficiency and conservation, good management practices, market incentives/compliance flexibility, area source programs, emission growth management and mobile source programs. In addition, CARB has developed a plan of control strategies for sources controlled by CARB (i.e. on-road and off-road motor vehicles and consumer products). Further, Transportation Control Measures (TCM) defined in SCAG's Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) are needed to attain the standards.

The 2007 AQMP includes 30 short-term and mid-term stationary and 7 mobile source control measures proposed for implementation by the district that are applicable to sources under their jurisdiction. Nine of these measures were included in the 2003 AQMP and have been updated or revised. Twenty-eight new measures are proposed based on replacement of the District's long-term reduction measures from the 2003 AQMP with more defined control measures or development of new control measures. Measures include; regulations to reduce VOC emissions from coatings, solvents, petroleum operations, and cutback asphalt; measures to reduce emissions from industrial combustion sources as well as residential and commercial space heaters; a measure to offset potential emission increases due to changes in natural gas specifications; localized control of PM emission hot spots; regulation of wood burning fireplaces and wood stoves; reductions from under-fired char broilers; reducing urban heat island through lighter colored roofing, and paving materials and tree planting programs; energy efficiency and conservation programs; and emission reduction from new or redevelopment projects through regulations that will establish mitigation options to be implemented in such project. The specific measures are discussed in Chapter 4 and presented in detail in Appendix IV-A of the 2007 AQMP.

The TCMs defined in the RTP and RTIP fall into three categories, High Occupancy Vehicle measures, Transit and System Management Measures and Information-based Transportation Strategies. The High Occupancy Vehicle (HOV) Strategy attempts to reduce the proportion of commute trips made by single occupancy vehicles which constitute 72% of all home work trips according to the 200 U.S. Census. Specific measures include new HOV lanes on existing and new facilities, HOV to HOV bypasses and High Occupancy Toll (HOT) lanes. The Transit and Systems Management Strategy incentivize the use of transit, alternative transportation modes (e.g., pedestrian and bicycles), and increases in average vehicle occupancy by facilitating vanpools, smart shuttles and similar strategies. Systems management measures include grade separation and traffic signal synchronization projects. The information-based Transportation Strategy relies primarily on the innovative provision of information in a manner that successfully influences the ways in which individuals use the regional transportation system. Providing ride matching to increase ride-sharing and carpool trips and providing near real-time estimates of congestion in an effort to influence persons to defer traveling to a less congested period are examples of the strategy.

In addition to District's measures and SCAG's TCMs, the Final 2007 AQMP includes additional short- and mid-term control measures aimed at reducing emissions from sources that are primarily under state and federal jurisdiction including on-road and off-road mobile sources, and consumer products. Measures committed to be enacted by CARB include (1) improvements to the smog check program, (2) cleaner in-use heavy duty truck emission regulations, (3) increased regulations on goods movement sources including ships, harbor craft, and port trucks, (4) regulations for cleaner in-use off-road equipment including agricultural equipment, (5) various measures to reduce evaporative VOC emissions from fuel storage and dispensing, (6) tightened emission standards and product reformulation for consumer products that emit VOC's, and (7) reductions in emissions from pesticide applications.

Four long-term "black box" control approaches are presented in the 2007 AQMP. These measures include (1) further reductions from on-road sources by retiring or retrofitting older high-emitting vehicles and accelerated penetration of very low and zero emission vehicles, (2) increased inspection and maintenance (I/M) programs for heavy-duty diesel trucks, (3) further reductions from off-road mobile sources through accelerated turn-over of existing equipment, retrofitting existing equipment and new engine emission standards, and (4) further reductions from consumer product VOC emissions.

The 2007 AQMP identifies four contingency measures that would need to be implemented if milestone emission targets are not met or if the standards are not attained by the required date. While implementation of these measures is expected to reduce emissions, there are issues that limit the viability of these measures as AQMP control measures. These issues include the availability of District resources to implement and enforce the measure, cost-effectiveness of the measure, potential adverse environmental impacts, effectiveness of emission reductions, and availability of methods to quantify emission reductions.

1.6 Climate

The climate in and around the project area, as with all of Southern California, is controlled largely by the strength and position of the subtropical high pressure cell over the Pacific Ocean. It maintains moderate temperatures and comfortable humidity, and limits precipitation to a few storms during the winter "wet" season. Temperatures are normally mild, excepting the summer months, which commonly bring substantially higher temperatures. In all portions of the basin, temperatures well above 100 degrees F. have been recorded in recent years. The annual average temperature in the basin is approximately 62 degrees Fahrenheit.

Winds in the project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night, the wind generally slows and reverses direction traveling towards the sea. Wind direction will be altered by local canyons, with wind tending to flow parallel to the canyons. During the transition period from one wind pattern to the other, the dominant wind direction rotates into the south and causes a minor wind direction maximum from the south. The frequency of calm winds (less than 2 miles per hour) is less than 10 percent. Therefore, there is little stagnation in the project vicinity, especially during busy daytime traffic hours.

Southern California frequently has temperature inversions, which inhibit the dispersion of pollutants. Inversions may be either ground based or elevated. Ground based inversions, sometimes referred to as radiation inversions, are most severe during clear, cold, early winter mornings. Under conditions of a ground-based inversion, very little mixing or turbulence occurs, and high concentrations of primary pollutants may occur local to major roadways. Elevated inversions can be generated by a variety of meteorological phenomena. Elevated inversions act as a lid or upper boundary and restrict vertical mixing. Below the elevated inversion, dispersion is not restricted. Mixing heights for elevated inversions are lower in the summer and more persistent. This low summer inversion puts a lid over the South Coast Air Basin (SCAB) and is responsible for the high levels of ozone observed during summer months in the air basin.

1.7 Monitored Air Quality

Air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates for the SCAB have been made for existing emissions ("2007 Air Quality Management Plan", June 2007). The data indicate that on-road (e.g.; automobiles, busses and trucks) and off-road (e.g.; trains, ships, and construction equipment) mobile sources are the major source of current emissions in the SCAB. Mobile sources account for approximately 64% of VOC emissions, 92% of NOx emissions, 39% of direct PM2.5 emissions, 59% of SOx emissions and 98% of CO emissions. Area sources (e.g., architectural coatings, residential water heaters, and consumer products) account for approximately 30% of VOC emissions and 32% of direct $PM_{2.5}$ emissions. Point sources (e.g., chemical manufacturing, petroleum production, and electric utilities) account for approximately 38% of SOx emissions. Entrained road dust account for approximately 20% of direct $PM_{2.5}$ emissions

Air quality data for this area is collected at the San Bernardino-4th Street monitoring station. The data collected at this station is considered representative of the air quality experienced in the vicinity of the project. The air pollutants measured at the San Bernardino station include ozone, carbon monoxide (CO), $PM_{2.5}$, PM_{10}, and nitrogen dioxide (NO_2). The air quality data monitored from 2005 to 2007 for the San Bernardino-4th Street station is presented in Table 3. The air quality data monitored from 2005 to 2007. The monitoring data presented in Table 3 were obtained from the CARB air quality data website (www.arb.ca.gov/adam/).

Table 3
Air Quality Levels Measured at the San Bernardino-4th St. Monitoring Station

Pollutant	California Standard	National Standard	Year	% Msrd.[1]	Max. Level	Days State Standard Exceeded[2]	Days National Standard Exceeded[2]
Ozone 1 Hour Average	0.09 ppm	None	2007	94	0.153	48	n/a
			2006	99	0.154	57	n/a
			2005	99	0.163	54	n/a
Ozone 8 Hour Average	0.070 ppm	0.08 ppm[4]	2007	94	0.121	72	51
			2006	99	0.126	72	29
			2005	99	0.129	72	31
CO 1 Hour Average	20 ppm	35 ppm	2007	96	3.7	0	0
			2006	99	2.7	0	0
			2005	96	3.3	0	0
CO 8 Hour Average	9.0 ppm	9 ppm	2007	2.3	1.6	0	0
			2006	99	2.2	0	0
			2005	96	2.5	0	0
Respirable Particulates PM_{10} 24 Hour Average	50 $\mu g/m^3$	150 $\mu g/m^3$	2007	99	219	26/160	1/6
			2006	97	92	22/--	0
			2005	98	72	20/122	0
Respirable Particulates PM_{10}[4] AAM[3]	20 $\mu g/m^3$	50 $\mu g/m^3$	2007	99	54	Yes	Yes
			2006	97	46	Yes	No
			2005	98	42	Yes	No
Fine Particulates $PM_{2.5}$[4] 24 Hour Average	None	65 $\mu g/m^3$	2007	78	72.1	n/a	Yes
			2006	78	55.0	n/a	No
			2005	88	106.2	n/a	Yes
Fine Particulates $PM_{2.5}$ AAM[3]	12 $\mu g/m^3$	15 $\mu g/m^3$	2007	78	17.8	Yes	Yes
			2005	78	17.8	Yes	Yes
			2004	88	17.3	Yes	Yes

Table continued on next page.

Table 3 (continued)
Air Quality Levels Measured at the San Bernardino-4th St. Monitoring Station

Pollutant	California Standard	National Standard	Year	% Msrd.1	Max. Level	Days State Standard Exceeded2	Days National Standard Exceeded2
NO_2	0.25 ppm	None	2006	99	0.088	0	n/a
1 Hour			2005	100	0.098	0	n/a
Average			2004	93	0.118	0	n/a
NO_2	None	0.053 ppm	2006	99	0.025	n/a	No
AAM3			2005	100	0.026	n/a	No
			2004	93	0.026	n/a	No

1. Percent of year where high pollutant levels were expected that measurements were made.
2. For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the PM_{10} 24-hour standard, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.
3. Annual Arithmetic Mean
4. On September 21, 2006 U.S. EPA announced that it was revoking the annual average PM_{10} standard and lowering the 24-hour $PM_{2.5}$ standard to 35 $\mu g/m^3$. The previous standards are presented, as the new standards are not fully implemented at this time.
5. On March 12, U.S. EPA announced that it was revising the 8-hour Ozone standard from 0.08 ppm to 0.075 ppm. The previous standard is presented, as the new standard has not been fully implemented at this time.

-- Data Not Reported
n/a – no applicable standard
Source: CARB Air Quality Data Statistics web site www.arb.ca.gov/adam/accessed 8/8/08

The monitoring data presented in Table 3 show that ozone and particulate matter (PM_{10} and $PM_{2.5}$) are the air pollutants of primary concern in the project area.

The state 1-hour ozone standard was exceeded at the San Bernardino Station 48 days in 2007, 57 days in 2006, and 54 days in 2005. The federal 8-hour ozone standard was exceeded 72 days each year in the past three years. The federal 8-hour standard has been exceeded between 31 and 51 days in each of the past three years. There does not appear to be a distinct trend in either maximum concentrations or number of days of exceedances of the ozone standards.

The state 24-hour concentration standard for PM_{10} was exceeded at the San Bernardino Station between 122 and 160 days each year between 2005 and 2007. The Federal 24-hour PM_{10} standard has been exceeded 6 days in 2007, but none in 2005 and 2006. The State annual average PM_{10} standard has been exceeded in the past three years. The Federal annual average standard has been exceeded in 2007, but not exceeded in 2005 or 2006. As of September 21, 2006, the Federal annual average standard has been revoked. There appears to be a slight upward trend in maximum 24-hour PM_{10} concentrations as well as annual average PM_{10} concentrations.

The Federal $PM_{2.5}$ standard has been exceeded at the San Bernardino Station in 2005 and 2007, but not exceeded in 2006. The data shows that the revised, but not yet implemented, 24-hour federal $PM_{2.5}$ standard of 35 $\mu g/m^3$ was exceeded in each of the past three years. The State and Federal $PM_{2.5}$ annual standards have also been exceeded for the past three years. There does not appear to be a distinct trend in $PM_{2.5}$ concentrations measured at the San Bernardino Station.

The monitored data shown in Table 3 show that other than ozone and PM_{10} exceedances as mentioned above, no State or Federal standards were exceeded for the remaining criteria pollutants.

1.8 Local Air Quality

In past years the CO concentrations have been examined near intersections to evaluate the potential local air quality impacts of the traffic generated by the project. Because the air basin now is in attainment of the CO state and federal ambient air quality, a local CO analysis is no longer required by the SCAQMD.

2.0 Potential Air Quality Impacts

Air quality impacts are usually divided into short-term and long-term. Short-term impacts are usually the result of construction or grading operations. Long-term impacts are associated with the built out condition of the proposed project. Impacts are further divided into regional impacts and local impacts. Regional impacts occur over a wide area and usually are associated with secondary pollutants such as ozone. Local impacts occur adjacent to the source of emissions.

2.1 Thresholds of Significance

2.1.1 Regional Air Quality

In their "1993 CEQA Air Quality Handbook", the SCAQMD has established significance thresholds to assess the impact of project related air pollutant emissions. Table 4 presents these significance thresholds. There are separate thresholds for short-term construction and long-term operational emissions. A project with daily emission rates below these thresholds are considered to have a less than significant effect on air quality. It should be noted the thresholds recommended by the SCAQMD are very low and subject to controversy. It is up to the individual lead agencies to determine if the SCAQMD thresholds are appropriate for their projects.

Table 4
SCAQMD Regional Pollutant Emission Thresholds of Significance

	Pollutant Emissions (lbs/day)					
	CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	SO_x
Construction	*550*	*75*	*100*	*150*	*55*	*150*
Operation	*550*	*55*	*55*	*150*	*55*	*150*

2.1.2 Local Air Quality

The SCAQMD has developed a methodology to assess the localized impacts of emissions from within a project site (SCAQMD, Draft Localized Significance Threshold Methodology, June 19, 2003). SCAQMD recommends, but does not require, comparing projects to localized significance thresholds (LSTs). The methodology document for the LST analysis states that "This methodology is guidance and is **VOLUNTARY**." [Emphasis shown as in the SCAQMD document.] The LST's were developed to analyze the significance of potential local air quality impacts of projects and provides screening tables for smaller projects of 5 acres or less, in which emissions may be less than the mass daily emission thresholds analyzed above. The SCAQMD also recommends project-specific air quality modeling (which is presented in the following sections) for larger projects.

An LST analysis is not warranted for this type of project since the project (approximately 373 acres) substantially exceeds the size of project that the LST protocol addresses and too little information is known about construction schedules for the site to conduct a worthwhile analysis. However, given the size and location of the project, it is expected that dispersion analysis, if information was available to conduct such an analysis, would confirm that the project will have a significant short-term localized impact for some of the primary pollutants. Therefore, the proposed project will likely have a significant impact on local air quality during construction.

2.2 Short-Term Impacts

Temporary impacts will result from project construction activities. Air pollutants will be emitted by construction equipment and fugitive dust will be generated during demolition of the existing improvements as well as during grading and excavation of the site.

2.2.1 Construction Emission Calculation Methodology

Emissions during the primary phases of construction were calculated using URBEMIS2007 program (version 9.2.4). URBEMIS is a computer program generated by the California Air Resources Board (CARB) that calculates emissions for construction and operation of development projects. For on-road vehicular emissions, the URBEMIS model utilizes the EMFAC2007 emission rates that have also been developed by CARB.

The West Valley Specific Plan comprises approximately 373 acres. At this time, the construction schedule is not known. As a worst case scenario, the construction of the project is assumed to start in 2009 and be completed by 2012. This timeframe is very short for an area of this size and definitely represents a worst case estimate. The activities for which emissions have been calculated and the activity levels during each of these activities are described in the following paragraphs. Output files from URBEMIS showing the detailed data used to calculate the emissions are presented in the appendix. Since little specific information is available regarding the equipment that will be used for construction, the URBEMIS defaults have generally been used for this analysis.

Mass Site Grading/Excavation is the excavation and grading of the entire project site. This work may occur simultaneously with other construction phases. Equipment used in the URBEMIS default assumption include (1) excavator, (1) grader, (1) dozer, (3) scrapers, (3) tractors/loaders/backhoes, and (1) water trucks. A major component of the grading emissions is the particulate matter generated by grading activities. If water or other soil stabilizers are used to control dust as required by SCAQMD Rule 403, the emissions can be substantially reduced (i.e., by 50+ percent depending on dust control application type and frequency). The particulate matter calculations include a 61% reduction from watering (see Appendices for URBEMIS assumptions and output).

Building Construction is the phase of construction when the building are erected. Building construction emissions were calculated for the portion of construction with the greatest amount of activity that will result in the highest emissions. Equipment used in the URBEMIS default assumption include (1) crane, (3) forklifts, (1) generator set, (1) welder, and (3) tractors/loaders/backhoes.

Asphalt Paving generates diesel engine exhaust emissions from the paving equipment and asphalt material haul trucks, as well as fugitive ROG emissions from the asphalt itself. Asphalt emissions were estimated utilizing URBEMISv9.2.4 default assumptions. The equipment required during project the asphalt paving would include: (1) paver, (2) rollers and (2) paving equipment.

Architectural Coatings include painting exterior and interior walls as well as coatings applied to windows and window casings. ROGs are emitted from these coatings as well as the solvents used in cleanup of the coatings. The amount of ROGs that are emitted is dependant on the specific coating being used and its VOC content. For this project, only low-VOC paint is assumed to be utilized. Architectural coating emissions were estimated utilizing URBEMISv9.2.4 default assumptions. The data used to calculate painting emissions are included in the appendix.

Grading/Building Construction/Paving/Architectural Coating is the grading and construction of the buildings described above with the addition of paving and painting activities that may occur simultaneously. URBEMIS defaults were used to estimate the construction emissions.

2.2.2 Construction Emissions

Table 5 presents the results of the total emissions calculations for the construction activities discussed above. These emissions represent the highest level of emissions during construction, if all construction phases would occur simultaneously. This is a reasonable assumption for this type of project, since it is likely that development of different areas will be started at different times. So it is possible to have construction in all of the different phases going on at the same time. The projected emissions are compared to the Significance Thresholds described in Section 2.1.1. A worksheet showing the specific data used to calculate the grading emissions is presented in the appendix.

Table 5
Total Peak Emissions By Construction Activity

	Pollutant Emissions (lbs/day)					
Activity	**ROG**	**NOX**	**CO**	**SOx**	**PM10**	**PM2.5**
Emissions Per Day (Pounds Per Day)						
Site Grading/Construction Equip.	12.3	107.4	54.6	0.0	115.9	27.9
Building/Construction Equip.	18.7	101.0	354.1	0.4	7.0	5.3
Architectural Coating	9.3	0.1	1.1	0.0	0.0	0.0
Asphalt Paving/Construction Equip.	3.6	20.7	12.3	0.0	1.8	1.6
Combined Construction Emissions	**44**	**229**	**422**	**0**	**125**	**35**
SCQAMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Exceeding Thresholds?	*NO*	*YES*	*NO*	*NO*	*NO*	*NO*

NOTE: Underline data indicate exceedances or are very close to exceedances.

The projected construction emissions are above the significance thresholds established by the SCAQMD. Specifically NOx, PM_{10} and $PM_{2.5}$ emissions exceed the threshold levels, without mitigation In general, the primary source of NO_x emissions would be from grading and building construction equipment, while the primary source of particulate emissions would be from soil disturbance during grading activities. Mitigation measures are recommended to reduce NOx, PM_{10} and $PM_{2.5}$ to the greatest extent possible. Mitigation measures for construction activities are recommended in Section 3.0.

2.2.3 Diesel Particulate Matter Emissions During Construction

In 1998, the California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines (Diesel Particulate Matter or DPM) as a Toxic Air Contaminant (TAC). It is assumed that the majority of the heavy construction equipment utilized during construction would be diesel fueled and emit DPM. Impacts from toxic substances are related to cumulative exposure and are assessed over a 70-year period. Cancer risk is expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to the cancer-causing substance over a 70-year lifetime (California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Guide to Health Risk Assessment.) Demolition and grading for the project, when the peak diesel exhaust emissions would occur, is expected to take only a few years. Because of the relatively short duration of construction compared to a 70-year lifespan, diesel emissions resulting from the construction of the project are not expected to result in a significant impact.

2.3 Long Term Impacts

2.3.1 Local Air Quality

Local air quality impacts are typically assessed by performing dispersion modeling at intersections affected by traffic generated by the project. In the past, local air quality around intersections is considered a potential issue at intersections with a Level of Service (LOS) of D or worse. The air basin is now in attainment for the CO standards and exccedances of the CO standards are not expected, even from local intersections with LOS worse than D. Therefore, local air quality impact modeling was not performed for this project. Local air pollutant concentrations would not be expected to approach the ambient air quality concentration standards due to local traffic.

To assess local air quality impacts, the significance thresholds are compared relative to the State Ambient Air Quality Standards. Because the area is in attainment of the CO state standards, exceedances of these standards, 20 ppm for 1-hour carbon monoxide (CO) concentration levels, and 9 ppm for 8-hour CO concentration levels, result in a significant local air quality impact. The air basin has reached attainment of the CO air quality standards and CO analysis is no longer required by the SCAQMD.

CO modeling was originally performed at four intersections considered to be the worst-case intersections in the South Coast Air Basin as part of the 2003 AQMP to demonstrate attainment of the federal CO standards. This CO modeling is included in the EPA approved 2005 SCAB CO Redesignation Request. The four intersections included, Wilshire at Veteran, Sunset at Highland, La Cienega at Century, and Long Beach at Imperial. The highest peak a.m. traffic volume was 8,062 (occurred at Wilshire and Veteran), while the highest peak p.m. volume was 8,674 (occurred at La Cienega and Century). Table 4-10 of Appendix V, Section 4 of the 2005 SCAB CO Redesignation Request shows that the modeled 1-hour average concentrations at these four intersections for 2002 conditions are below the 8-hour standard of 9 ppm. The highest modeled 1-hour average concentration of 4.6 ppm took place at the Wilshire and Veteran intersection.

The traffic study prepared for the project indicates that none of the local street intersections in the project area has peak hour traffic volumes that exceed those at the intersections modeled in the AQMP. In 2030, the highest peak p.m. traffic volume of 7,342 is projected to occur at the Riverside Avenue and Valley Boulevard intersection with LOS "D" with proejct improvements. This peak volume is lower than the peak volumes at the four intersection modeled in the AQMP. As a result, the project is not project to result in a significant local air quality impact.

2.3.2 Project Emissions Calculation Methodology

Air pollutant emissions due to the project were calculated using the URBEMIS2007 program (version 9.4.2). The program was set to calculate emissions for the entire WVSPA. Default URBEMIS2007 variables were used for the calculations except the trip generation rate. The project's land uses and trip generation rates were obtained from the traffic study titled "West Valley Specific Plan Traffic Impact Analysis" prepared by Kunzman Associates, September 8, 2008. Kunzman Associates determined the daily trip generation to be 52,388 trips per day.

URBEMIS2007 calculates maximum daily emissions for the summertime and wintertime periods. The results presented below are for the season that results in the highest total emissions. Output files from the URBEMIS2007 program are presented in the appendix and provide the emissions for each season independently.

2.3.3 Project Operational Emissions

2.3.4 Regional Air Quality

The primary source of regional emissions generated by the proposed project will be from motor vehicles. Other emissions from the project site will be generated from the combustion of natural gas for water and space heating, the use of landscaping equipment, and architectural coatings during maintenance. Table 6 presents the results of the URBEMIS2007 model showing the maximum daily air pollutant emissions projected for an estimated completion year 2012 and a horizon year 2030. The summer and winter project emissions were analyzed. The higher seasonal emissions which are winter emissions are presented in Table 6. The specific data utilized in calculating the emissions due to the project are provided in the appendix.

Table 6
Total Project Emissions

Source	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Buildout Year 2030						
Area Source Emissions	275.5	43.4	559.6	1.5	83.9	80.7
Operational (vehicle) Emissions	368.4	561.3	3,416.1	3.2	608.4	122.2
Total Project Emissions	**644**	**605**	**3,976**	**5**	**692**	**203**
Year 2030						
Area Source Emissions	275.5	43.4	559.6	1.5	83.9	80.7
Operational (vehicle) Emissions	175.2	170.5	1,325.9	3.3	603.7	117.8
Total Project Emissions	**451**	**214**	**1,885**	**5**	**688**	**199**
SCQAMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*

NOTE: Underline data indicate exceedances.

Table 6 shows that the total project emissions are above the SCAQMD Thresholds for ROG, NOx, CO, PM_{10} and $PM_{2.5}$ for the opening year (2012), and horizon year 2030. The project emissions for the opening year are higher than emissions in 2030. This is mainly due to a steady decrease in the EMFAC2007 vehicular emission rates in the future years. However, since the project emissions are above the significance thresholds, the project will result in significant regional air quality impacts. Long-term mitigation measures are recommended in Section 3.0.

Table 7 compares the 2030 emissions due to the project to the projected basin wide emissions from the 2003 AQMP. This comparison shows that the project represents a very small fraction of the total regional emissions. The project represents, at most, just less than 0.2% of the total regional emissions.

Table 7
Comparison of Project Emissions with SCAB Emissions

	Pollutant Emissions (tons/day)					
	CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	SO_x
Project Emissions	0.225	0.107	0.943	0.002	0.344	0.099
2023 South Coast Air Basin*	2,147	95	539	508	318	102
Project as Percentage of Basin	0.0105%	0.1126%	0.1749%	0.0005%	0.1081%	0.0973%

* Source: 2007 AQMP Table 3-5A except PM_{10} from 2003 AQMP Tables 3-5A and 3-5B

2.4 Compliance with Air Quality Planning

The following sections deal with the major air planning requirements for this project. Specifically, consistency of the project with the AQMP is addressed. As discussed below, consistency with the AQMP is a requirement of the California Environmental Quality Act (CEQA).

2.4.1 Consistency with AQMP

An EIR must discuss any inconsistencies between the proposed project and applicable GPs and regional plans (California Environmental Quality Act (CEQA) guidelines (Section 15125)). Regional plans that apply to the proposed project include the South Coast Air Quality Management Plan (AQMP). In this regard, this section will discuss any inconsistencies between the proposed project with the AQMP.

The purpose of the consistency discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-maker determined that the project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD's CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the plan if it furthers one or more policies and does not obstruct other policies. The Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP (except as provided for CO in Section 9.4 for relocating CO hot spots).

(2) Whether the project will exceed the assumptions in the AQMP in 2010 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality analysis contained in this report, long-term operation will result in significant regional air quality impacts based on the SCAQMD thresholds of significance. Emissions generated during construction will be in excess of SCAQMD's threshold criteria, specifically for NOx, PM_{10}, and $PM_{2.5}$ emissions. However, it is unlikely that short-term construction activities will increase the frequency or severity of existing air quality violations due to required compliance with SCAQMD Rules and Regulations. Similarly, the emissions from the project are projected to be a fraction of a percentage of the basin wide emissions.

The proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards (Refer to Section 2.3.4). However, the consistency criteria pertains to local air quality impacts, rather than regional emissions, as defined by the SCAQMD. The SCAQMD has identified CO as the best indicator pollutant for determining whether air quality violations would occur, as CO hot-spot is most directly related to increase in traffic. Nevertheless, the air basin is now in attainment for the CO standards and exccedances of the CO standards are not expected, and local air quality impact modeling is no longer performed (refer to Section 2.3.1). Local air pollutant concentrations would not be expected to exceed the ambient air quality concentration standards due to local traffic, with or without the project. Because the project is not projected to impact the local air quality, the project is found to be consistent with the AQMP for the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the project with the assumptions in the AQMP. Thus, the emphasis of this criterion is to insure that the analyses conducted for the project are based on the same forecasts as the AQMP. The Regional Comprehensive Plan and Guide (RCP&G) consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA.

Since the SCAG forecasts are not detailed, the test for consistency of this project is not specific. The traffic modeling methodologies upon which much of the air quality assessment are based on the East Valley Traffic Model, Congestion Management Program (CMP), the ITE Trip Generation, 7th Edition, and the highway Capacity Manual 2000. The AQMP assumptions are based upon projections from local general plans. Projects that are consistent with the local general plan are consistent with the AQMP assumptions. The project is included in the traffic volumes for opening year 2012 and horizon year 2030 forecast including regional growth. Additionally, the WVSPA is revising and amending a portion of the West Subarea of the existing WVSP; the East Subareas will remain unaffected by this amendment. Of the West Subarea, approximately 373 acres of the total 476 acres is affected by this amendment. The WVSPA has been developed to implement to goals and policies of the City of Colton General Plan, and thus, are compatible with the City's General Plan. It appears that the growth forecasts for the proposed project are consistent with the SCAG growth forecasts. Therefore, the second criterion is met for consistency with the AQMP.

3.0 Mitigation Measures

3.1 Short-Term Impacts

NO_X, PM_{10} and $PM_{2.5}$ emissions associated with the construction of the project were shown to exceed the threshold of significance without mitigation measures. Mitigation is recommended to the greatest extent possible.

3.1.1 Particulate Emission (PM-10) Control

AQ-1: Comply with Rules 402 and 403. During construction of the proposed project, the property owner/developer and its contractors shall be required to comply with regional rules, which will assist in reducing short-term air pollutant emissions. Rule 403 requires that fugitive dust be controlled with the best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Two options are presented in Rule 403; monitoring of particulate concentrations or active control. Monitoring involves a sampling network around the project with no additional control measures unless specified concentrations are exceeded. The active control option does not require any monitoring, but requires that a list of measures be implemented starting with the first day of construction.

Rule 403 requires that "No person conducting active operations without utilizing the applicable best available control measures of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation." The measures from the SCAQMD's Table 1 of Rule 403 are presented in Table 8. The applicable measures presented in Table 1 are required to be implemented by Rule 403.

SCAQMD Rule 403 requires that "Large Projects" implement additional measures. A Large Project is defined as "any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic meters (5,000 cubic yards) for more than three times during the most recent 365 day period. Grading of the project will be considered a Large Project under Rule 403. Therefore, the project will be required to implement the applicable actions specified in Table 2 of the Rule. Table 2 from Rule 403 is presented below as Table 9.

As a Large Operation, the project will also be required to:

- Submit a fully executed Large Operation Notification (SCAQMD Form 403N) to the District's Executive Officer within 7 days of qualifying as a large operation;
- Include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;
- Maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request.
- Install and maintain project signage with project contact signage that meets the

minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities.

- Identify a dust control supervisor that is employed by or contracted with the property owner or developer, is on the site or available on-site within 30 minutes during working hours, has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements, and has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class
- Notify the District's Executive Officer in writing within 30 days after the site no longer qualifies as a large operation

SCAQMD Rule 403 also requires that the construction activities "shall not cause or allow PM_{10} levels exceed 50 micrograms per cubic meter when determined by simultaneous sampling, as the difference between upwind and down wind sample." Large Projects that cannot meet this performance standard are required to implement the applicable actions specified in Table 3 of Rule 403. Table 3 from Rule 403 is presented below as Table 10. Rather than perform monitoring to determine conformance with the performance standard, which will not reduce PM10 emissions, <u>the project shall implement all applicable measures presented in Table 10 (Rule 403 Table 3) regardless of conformance with the Rule 403 performance standard.</u> This potentially results in a higher reduction of particulate emissions than if these measures were implemented only after being determined to be required by monitoring.

Further, SCAQMD Rule 403 requires that that the project shall not "allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation." All track-out from an active operation is required to be removed at the conclusion of each workday or evening shift. Any active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk materials must utilize at least one of the measures listed in Table 11 at each vehicle egress from the site to a paved public road.

Table 8
Required Best Available Control Measures (Rule 403 Table 1)

Source Category	Control Measure	Guidance
Backfilling		
01-1	Stabilize backfill material when not actively handling; and	• Mix backfill soil with water prior to moving • Dedicate water truck or high capacity hose to backfilling equipment • Empty loader bucket slowly so that no dust plumes are generated • Minimize drop height from loader bucket
01-2	Stabilize backfill material during handling; and	
01-3	Stabilize soil at completion of activity.	
Clearing and Grubbing		
02-1	Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and	• Maintain live perennial vegetation where possible • Apply water in sufficient quantity to prevent generation of dust plumes
02-2	Stabilize soil during clearing and grubbing activities; and	
02-3	Stabilize soil immediately after clearing and grubbing activities.	
Clearing Forms		
03-1	Use water spray to clear forms; or	• Use of high pressure air to clear forms may cause exceedance of Rule requirements
03-2	Use sweeping and water spray to clear forms; or	
03-3	Use vacuum system to clear forms.	
Crushing		
04-1	Stabilize surface soils prior to operation of support equipment; and	• Follow permit conditions for crushing equipment • Pre-water material prior to loading into crusher • Monitor crusher emissions opacity • Apply water to crushed material to prevent dust plumes
04-2	Stabilize material after crushing.	
Cut and Fill		
05-1	Pre-water soils prior to cut and fill activities; and	• For large sites, pre-water with sprinklers or water trucks and allow time for penetration • Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
05-2	Stabilize soil during and after cut and fill activities.	

Table 8 (Continued)
Required Best Available Control Measures (Rule 403 Table 1)

Source Category	Control Measure	Guidance
Demolition – Mechanical/Manual		
06-1	Stabilize wind erodible surfaces to reduce dust; and	• Apply water in sufficient quantities to prevent the generation of visible dust plumes
06-2	Stabilize surface soil where support equipment and vehicles will operate; and	
06-3	Stabilize loose soil and demolition debris; and	
06-4	Comply with AQMD Rule 1403.	
Disturbed Soil		
07-1	Stabilize disturbed soil throughout the construction site; and	• Limit vehicular traffic and disturbances on soils where possible
07-02	Stabilize disturbed soil between structures	• If interior block walls are planned, install as early as possible • Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-Moving Activities		
08-1	Pre-apply water to depth of proposed cuts; and	• Grade each project phase separately, timed to coincide with construction phase
08-2	Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and	• Upwind fencing can prevent material movement on site • Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
08-3	Stabilize soils once earth-moving activities are complete.	
Importing/Exporting of Bulk Materials		
09-1	Stabilize material while loading to reduce fugitive dust emissions; and	• Use tarps or other suitable enclosures on haul trucks • Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage
09-2	Maintain at least six inches of freeboard on haul vehicles; and	• Comply with track-out prevention/mitigation requirements
09-3	Stabilize material while transporting to reduce fugitive dust emissions; and	• Provide water while loading and unloading to reduce visible dust plumes
09-4	Stabilize material while unloading to reduce fugitive dust emissions; and	
09-5	Comply with Vehicle Code Section 23114.	

Table 8 (Continued)
Required Best Available Control Measures (Rule 403 Table 1)

Source Category	Control Measure	Guidance
Landscaping		
10-1	Stabilize soils, materials, slopes	• Apply water to materials to stabilize Maintain materials in a crusted condition • Maintain effective cover over materials • Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes • Hydroseed prior to rain season
Road Shoulder Maintenance		
11-1	Apply water to unpaved shoulders prior to clearing; and	• Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs
11-2	Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	• Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs
Screening		
12-1	Pre-water material prior to screening; and	• Dedicate water truck or high capacity hose to screening operation • Drop material through the screen slowly and minimize drop height • Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
12-2	Limit fugitive dust emissions to opacity and plume length standards; and	
12-3	Stabilize material immediately after screening.	
Staging Areas		
13-1	Stabilize staging areas during use; and	• Limit size of staging area • Limit vehicle speeds to 15 miles per hour • Limit number and size of staging area entrances/exists
13-2	Stabilize staging area soils at project completion.	
Stockpiles/ Bulk Material Handling		
14-1	Stabilize stockpiled materials.	• Add or remove material from the downwind portion of the storage pile • Maintain storage piles to avoid steep sides or faces
14-2	Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	

Table 8 (Continued)
Required Best Available Control Measures (Rule 403 Table 1)

Source Category	Control Measure	Guidance
Traffic Areas for Construction Activities		
15-1	Stabilize all off-road traffic and parking areas; and	• Apply gravel/paving to all haul routes as soon as possible to all future roadway areas • Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
15-2	Stabilize all haul routes; and	
15-3	Direct construction traffic over established haul routes.	
Trenching		
16-1	Stabilize surface soils where trencher or excavator and support equipment will operate; and	• Pre-watering of soils prior to trenching is an effective preventive measure. • For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching • Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
16.2	Stabilize soils at the completion of trenching activities.	
Truck Loading		
17-1	Pre-water material prior to loading; and	• Empty loader bucket such that no visible dust plumes are created • Ensure that the loader bucket is close to the truck to minimize drop height while loading
17.2	Ensure that freeboard exceeds six inches (CVC 23114)	
Turf Overseeding		
18-1	Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and	• Haul waste material immediately off-site
18-2	Cover haul vehicles prior to exiting the site.	

Table 8 (Continued)
Required Best Available Control Measures (Rule 403 Table 1)

Source Category	Control Measure	Guidance
Unpaved Roads/Parking Lots		
19-1	Stabilize soils to meet the applicable performance standards; and	• Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
19-2	Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	
Vacant Land		
20-1	In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 9
Dust Control Measures for Large Operations (Rule 403 Table 2)

Fugitive Dust Source Category	Control Actions
Earth-moving (except construction cutting and filling areas, and mining operations)	
(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	
(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.
Earth-moving: Construction cut areas and mining operations:	
(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	
(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	
(2c)	Apply chemical stabilizers within five working days of grading completion; OR
(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.

Table 9 (Continued)
Dust Control Measures for Large Operations (Rule 403 Table 2)

Fugitive Dust Source Category	Control Actions
Inactive disturbed surface areas	
(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.
Unpaved Roads	
(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	
(5a)	Apply chemical stabilizers; OR
(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
(5c)	Install temporary coverings; OR
(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	
(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

Table 10
Contingency Control Measures for Large Operations (Rule 403 Table 3)

Fugitive Dust Source Category		Control Actions
Earth-moving		
	(1A)	Cease all active operations; OR
	(2A)	Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas		
	(0B)	On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR
	(1B)	Apply chemical stabilizers prior to wind event; OR
	(2B)	Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR
	(3B)	Take the actions specified in Table 2, Item (3c); OR
	(4B)	Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved Roads		
	(1C)	Apply chemical stabilizers prior to wind event; OR
	(2C)	Apply water twice per hour during active operation; OR
	(3C)	Stop all vehicular traffic.
Open Storage Piles		
	(1D)	Apply water twice per hour; OR
	(2D)	Install temporary coverings.
Paved Road Track-Out		
	(1E)	Cover all haul vehicles; OR
	(2E)	Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories		
	(1F)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 11
Track Out Control Options

(A)	Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 20 feet wide and 50 feet long.
(B)	Pave the surface extending at least 100 feet and a width of at least 20 feet wide.
(C)	Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle under carriages before vehicles exit the site.
(D)	Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.
(E)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified items (A) through (D) above.

3.1.2 Construction Equipment Emission Control

While Measure AQ-1 above addresses particulate emissions from construction activities, other pollutants generated by construction equipment will also exceed SCAQMD thresholds. The generation of these emissions is almost entirely due to engine combustion in construction equipment and employee commuting. The measure below addresses these emissions.

AQ-2: Reduce construction equipment emissions by implementing the following measures. The following measures should be implemented. They should be included in grading and improvement plans specifications for implementation by contractors. Some additional gains in particulate emission control will also be realized from the implementation of these measures.

- Use low emission mobile construction equipment. The property owner/developer shall comply with CARB requirements for heavy construction equipment.
- Maintain construction equipment engines by keeping them tuned.
- Use low sulfur fuel for stationary construction equipment. This is required by SCAQMD Rules 431.1 and 431.2.
- Utilize existing power sources (i.e., power poles) when available. This measure would minimize the use of higher polluting gas or diesel generators.
- Configure construction parking to minimize traffic interference.
- Minimize obstruction of through-traffic lanes. Construction should be planned so that lane closures on existing streets are kept to a minimum.
- Schedule construction operations affecting traffic for off-peak hours to the best extend when possible.
- Develop a traffic plan to minimize traffic flow interference from construction activities (the plan may include advance public notice of routing, use of public transportation and satellite parking areas with a shuttle service.)
- Prohibit truck idling in excess of five minutes.
- Use emulsified diesel fuels, and equip construction equipment with oxidation catalysts particulate traps, and other verified/certified technologies, ect.

- Provide temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow.
- Schedule construction activities that that affect traffic flow on the arterial system to off-peak hour to the extent practicable.
- Reroute construction trucks away from congested streets or sensitive receptor areas, and appoint a construction relations officer to act as a community liaison concerning on-site construction activity including resolution of issues related to PM_{10} generation.
- Suspend all excavating and grading operations when wind speeds (as instantaneous gust) exceed 25 mph.

3.1.3 Architectural Coating Emission Control

The analysis presented in Section 2.2.1 showed that ROG emissions from painting are not projected to exceed the significance threshold, if the painting of the entire project took about three years to complete. Regardless, the following measures should be incorporated into project construction to the greatest extent feasible.

- Limit the amount of painting each day.
- Minimize the amount of paint used by using pre-coated, pre-colored and naturally colored building materials.
- Use Water-Based and LOW-VOC coatings with VOC contents less than those required by SCAQMD Rule 1113.
- Use high transfer efficiency painting methods such as HVLP (High Volume Low Pressure) sprayers and brushes/rollers were possible.

3.2 Long-Term Impacts

3.2.1 Regional Emissions

ROG, CO, NO_X, PM_{10} and $PM_{2.5}$ emissions associated with the operation of the project were shown to exceed the threshold of significance. Mitigation is required.

AQ-3 Implement Measures Recommended in SCAQMD's CEQA Handbook and the URBEMISv9.2.4 Model. The property owner/developer will reduce operation-related emissions through implementation of practices identified in SCAQMD's CEQA Handbook and URBEMIS. SCAQMD's CEQA Handbook includes several measures that can be used to minimize emissions associated with residential projects. In addition, the URBEMISv9.2.4 model identifies several measures, some of which overlap those in the CEQA Handbook. The following measures, based on these sources, will be implemented by the project owner/developer and contractors to reduce criteria pollutant emissions from stationary sources directly related to the project:

Additionally, support and compliance with the AQMP for the basin is the most important measure to achieve this goal. The AQMP includes improvement of mass transit facilities and implementation of vehicular usage reduction programs. Additionally, energy conservation measures are included.

TDM Measures

1. Provide adequate ingress and egress at all entrances to public facilities to minimize vehicle idling at curbsides. Presumably, this measure would improve traffic flow into and out of the parking lot. The air quality benefits are incalculable because more specific data is required.
2. Provide dedicated turn lanes as appropriate and provide roadway improvements at heavily congested roadways. Again, the areas where this measure would be applicable are the intersections in and near the project area, such as Pepper Road, Valley Boulevard, Meridian Avenue, Hermosa Avenue and other roadways within the project site. Presumably, these measures would improve traffic flow. Emissions would drop as a result of the higher traffic speeds, but to an unknown extent.
3. Synchronize traffic signals. The areas where this measure would be applicable are roadway intersections within the project area. This measure would be more effective if the roadways beyond the project limits are synchronized as well. The air quality benefits are incalculable because more specific data is required
4. Ensure that sidewalks and pedestrian paths are installed throughout the project area.

Energy Efficient Measures

5. Improve thermal integrity of the buildings and reduce thermal load with automated time clocks or occupant sensors. Reducing the need to heat or cool structures by improving thermal integrity will result in a reduced expenditure of energy and a reduction in pollutant emissions. The air quality benefit depends upon the extent of the reduction of energy expenditure which is unknown in this case. The air quality benefit is also unknown, therefore.
6. Install energy efficient street lighting. Implementation of this measure is not feasible because of varying definitions of the phrase "energy efficient."
7. Capture waste heat and reemploy it in nonresidential buildings. This measure is applicable to the commercial buildings in the project.
8. Landscape with native drought-resistant species to reduce water consumption and to provide passive solar benefits. The connection between reducing water consumption and improving air quality is non-existent in the context of this analysis. A measure designed to reduce water consumption has no place in an air quality mitigation package. The assertion that such vegetation would provide "passive solar benefits" is false because drought resistant vegetation lacks both the height and the fullness to shade the building structures. No air quality benefit will occur as a result of the implementation of this measure.
9. Provide lighter color roofing and road materials and tree planning programs to comply with the AQMP Miscellaneous Sources MSC-01 measure. This measure reduces the need for cooling energy in the summer.
10. Introduce window glazing, wall insulation, and efficient ventilation methods. The construction of buildings with features that minimize energy use is already required by the Uniform Building Code.
11. Install low-emission water heaters, and use built-in, energy-efficient appliances.

4.0 Unavoidable Significant Impacts

4.1 Short-Term Impacts

The analysis demonstrates that the project will result in a significant short-term air quality impact, specifically for NOx emissions. Mitigation will reduce NOx emissions, but not to the point that they will fall under the SCAQMD's thresholds. Therefore, construction emissions of NOx will exceed the SCAQMD thresholds even after mitigation, and short-term construction air quality impacts will be significant. PM_{10} and $PM_{2.5}$ emissions, if mitigated to the greatest extent possible, would be reduced to below significance levels.

4.2 Long-Term Impacts

The long term regional air quality impacts due to the proposed project with the recommended measures above will be reduced to an extent. However, the ROG, CO, $NO_{X,}$ PM_{10} and $PM_{2.5}$ emissions would continue to exceed the SCAQMD thresholds and be considered significant and unavoidable.

Appendix

URBEMIS Output Files

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Tanya's Stuff\WestValley AQ"HRA\WestValleySP.urb924

Project Name: West Valley S.P.

Project Location: San Bernadino County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	91.61	229.13	422.02	0.43	1,642.87	12.15	1,655.02	343.37	11.09	354.46	54,403.38
2009 TOTALS (lbs/day mitigated)	43.88	229.13	422.02	0.43	112.52	12.15	124.66	23.77	11.09	34.86	54,403.38
2010 TOTALS (lbs/day unmitigated)	89.21	213.66	391.79	0.43	1,642.87	11.38	1,654.25	343.37	10.38	353.75	54,374.23
2010 TOTALS (lbs/day mitigated)	47.89	213.66	391.79	0.43	112.52	11.38	123.89	23.77	10.38	34.15	54,374.23
2011 TOTALS (lbs/day unmitigated)	86.84	198.02	364.53	0.43	1,642.87	10.58	1,653.45	343.37	9.65	353.02	54,350.87
2011 TOTALS (lbs/day mitigated)	45.51	198.02	364.53	0.43	112.52	10.58	123.09	23.77	9.65	33.42	54,350.87
2012 TOTALS (lbs/day unmitigated)	84.70	182.81	339.14	0.43	1,642.87	9.75	1,652.62	343.37	8.88	352.25	54,318.10
2012 TOTALS (lbs/day mitigated)	42.18	182.81	339.14	0.43	112.52	9.75	122.26	23.77	8.88	32.65	54,318.10

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	81.99	28.81	39.79	0.00	0.11	0.11	35,256.46

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	333.54	474.89	3,460.38	3.81	608.42	122.15	375,128.80

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	415.53	503.70	3,500.17	3.81	608.53	122.26	410,385.26

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-2/27/2009 Active Days: 42	12.33	107.35	54.55	0.01	1,641.06	5.22	1,646.28	342.73	4.80	347.53	9,914.72
Mass Grading 01/01/2009-09/01/2012	12.33	107.35	54.55	0.01	1,641.06	5.22	1,646.28	342.73	4.80	347.53	9,914.72
Mass Grading Dust	0.00	0.00	0.00	0.00	1,641.02	0.00	1,641.02	342.71	0.00	342.71	0.00
Mass Grading Off Road Diesel	11.80	101.10	49.35	0.00	0.00	4.97	4.97	0.00	4.57	4.57	8,842.87
Mass Grading On Road Diesel	0.43	6.07	2.21	0.01	0.03	0.24	0.27	0.01	0.23	0.23	761.76
Mass Grading Worker Trips	0.10	0.18	2.99	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.09
Time Slice 3/2/2009-5/29/2009 Active Days: 65	34.62	229.06	420.87	0.43	1,642.87	12.14	1,655.01	343.37	11.09	354.46	54,284.79
Asphalt 03/01/2009-12/01/2012	3.57	20.70	12.26	0.00	0.01	1.76	1.77	0.00	1.62	1.62	1,633.29
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.39	20.13	10.59	0.00	0.00	1.74	1.74	0.00	1.60	1.60	1,418.81
Paving On Road Diesel	0.03	0.47	0.17	0.00	0.00	0.02	0.02	0.00	0.02	0.02	59.43
Paving Worker Trips	0.05	0.09	1.50	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.05
Building 03/01/2009-11/01/2012	18.72	101.02	354.06	0.42	1.79	5.16	6.96	0.64	4.67	5.31	42,736.78
Building Off Road Diesel	4.37	24.71	14.63	0.00	0.00	1.81	1.81	0.00	1.67	1.67	2,259.28
Building Vendor Trips	4.85	58.68	46.17	0.10	0.36	2.41	2.76	0.12	2.21	2.33	10,096.46
Building Worker Trips	9.50	17.63	293.26	0.32	1.44	0.94	2.38	0.52	0.79	1.31	30,381.05
Mass Grading 01/01/2009-09/01/2012	12.33	107.35	54.55	0.01	1,641.06	5.22	1,646.28	342.73	4.80	347.53	9,914.72
Mass Grading Dust	0.00	0.00	0.00	0.00	1,641.02	0.00	1,641.02	342.71	0.00	342.71	0.00
Mass Grading Off Road Diesel	11.80	101.10	49.35	0.00	0.00	4.97	4.97	0.00	4.57	4.57	8,842.87
Mass Grading On Road Diesel	0.43	6.07	2.21	0.01	0.03	0.24	0.27	0.01	0.23	0.23	761.76
Mass Grading Worker Trips	0.10	0.18	2.99	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.09
Time Slice 6/1/2009-12/31/2009 Active Days: 154	**91.61**	**229.13**	**422.02**	**0.43**	**1,642.87**	**12.15**	**1,655.02**	**343.37**	**11.09**	**354.46**	**54,403.38**
Asphalt 03/01/2009-12/01/2012	3.57	20.70	12.26	0.00	0.01	1.76	1.77	0.00	1.62	1.62	1,633.29
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.39	20.13	10.59	0.00	0.00	1.74	1.74	0.00	1.60	1.60	1,418.81
Paving On Road Diesel	0.03	0.47	0.17	0.00	0.00	0.02	0.02	0.00	0.02	0.02	59.43
Paving Worker Trips	0.05	0.09	1.50	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.05
Building 03/01/2009-11/01/2012	18.72	101.02	354.06	0.42	1.79	5.16	6.96	0.64	4.67	5.31	42,736.78

Building Off Road Diesel	4.37	24.71	14.63	0.00	0.00	1.81	1.81	0.00	1.67	1.67	2,259.28
Building Vendor Trips	4.85	58.68	46.17	0.10	0.36	2.41	2.76	0.12	2.21	2.33	10,096.46
Building Worker Trips	9.50	17.63	293.26	0.32	1.44	0.94	2.38	0.52	0.79	1.31	30,381.05
Coating 06/01/2009-12/01/2012	56.99	0.07	1.14	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.59
Architectural Coating	56.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.14	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.59
Mass Grading 01/01/2009-09/01/2012	12.33	107.35	54.55	0.01	1,641.06	5.22	1,646.28	342.73	4.80	347.53	9,914.72
Mass Grading Dust	0.00	0.00	0.00	0.00	1,641.02	0.00	1,641.02	342.71	0.00	342.71	0.00
Mass Grading Off Road Diesel	11.80	101.10	49.35	0.00	0.00	4.97	4.97	0.00	4.57	4.57	8,842.87
Mass Grading On Road Diesel	0.43	6.07	2.21	0.01	0.03	0.24	0.27	0.01	0.23	0.23	761.76
Mass Grading Worker Trips	0.10	0.18	2.99	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.09
Time Slice 1/1/2010-12/31/2010 Active Days: 261	89.21	213.66	391.79	**0.43**	**1,642.87**	11.38	1,654.25	**343.37**	10.38	353.75	54,374.23
Asphalt 03/01/2009-12/01/2012	3.38	19.68	12.01	0.00	0.01	1.70	1.71	0.00	1.57	1.57	1,633.14
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.20	19.17	10.47	0.00	0.00	1.68	1.68	0.00	1.55	1.55	1,418.81
Paving On Road Diesel	0.03	0.43	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	59.43
Paving Worker Trips	0.04	0.08	1.38	0.00	0.01	0.00	0.01	0.00	0.00	0.01	154.90
Building 03/01/2009-11/01/2012	17.17	92.71	327.34	0.42	1.79	4.78	6.58	0.64	4.32	4.96	42,708.19
Building Off Road Diesel	4.08	23.31	14.31	0.00	0.00	1.67	1.67	0.00	1.54	1.54	2,259.28
Building Vendor Trips	4.50	53.44	42.92	0.10	0.36	2.17	2.52	0.12	1.99	2.11	10,097.01
Building Worker Trips	8.59	15.96	270.11	0.32	1.44	0.95	2.38	0.52	0.79	1.31	30,351.90
Coating 06/01/2009-12/01/2012	56.99	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.48
Architectural Coating	56.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.48
Mass Grading 01/01/2009-09/01/2012	11.68	101.22	51.39	0.01	1,641.06	4.89	1,645.96	342.73	4.50	347.22	9,914.42
Mass Grading Dust	0.00	0.00	0.00	0.00	1,641.02	0.00	1,641.02	342.71	0.00	342.71	0.00
Mass Grading Off Road Diesel	11.19	95.53	46.62	0.00	0.00	4.66	4.66	0.00	4.29	4.29	8,842.87
Mass Grading On Road Diesel	0.40	5.52	2.01	0.01	0.03	0.22	0.24	0.01	0.20	0.21	761.76
Mass Grading Worker Trips	0.09	0.16	2.76	0.00	0.01	0.01	0.02	0.01	0.01	0.01	309.80
Time Slice 1/3/2011-12/30/2011 Active Days: 260	86.84	198.02	364.53	**0.43**	**1,642.87**	10.58	1,653.45	**343.37**	9.65	353.02	54,350.87
Asphalt 03/01/2009-12/01/2012	3.19	18.71	11.76	0.00	0.01	1.64	1.65	0.00	1.51	1.51	1,633.02
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.02	18.25	10.34	0.00	0.00	1.62	1.62	0.00	1.49	1.49	1,418.81
Paving On Road Diesel	0.03	0.39	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	59.43
Paving Worker Trips	0.04	0.07	1.27	0.00	0.01	0.00	0.01	0.00	0.00	0.01	154.78
Building 03/01/2009-11/01/2012	15.73	84.46	303.19	0.42	1.79	4.46	6.25	0.64	4.02	4.66	42,685.29
Building Off Road Diesel	3.77	21.85	13.95	0.00	0.00	1.57	1.57	0.00	1.45	1.45	2,259.28
Building Vendor Trips	4.15	48.11	39.68	0.10	0.36	1.94	2.29	0.12	1.77	1.89	10,097.79
Building Worker Trips	7.81	14.50	249.56	0.32	1.44	0.95	2.38	0.52	0.79	1.31	30,328.22
Coating 06/01/2009-12/01/2012	56.98	0.06	0.97	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.38
Architectural Coating	56.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	0.97	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.38
Mass Grading 01/01/2009-09/01/2012	10.93	94.79	48.61	0.01	1,641.06	4.48	1,645.54	342.73	4.12	346.84	9,914.18
Mass Grading Dust	0.00	0.00	0.00	0.00	1,641.02	0.00	1,641.02	342.71	0.00	342.71	0.00
Mass Grading Off Road Diesel	10.48	89.68	44.24	0.00	0.00	4.27	4.27	0.00	3.93	3.93	8,842.87
Mass Grading On Road Diesel	0.37	4.96	1.82	0.01	0.03	0.19	0.22	0.01	0.18	0.19	761.76
Mass Grading Worker Trips	0.08	0.15	2.55	0.00	0.01	0.01	0.02	0.01	0.01	0.01	309.55
Time Slice 1/2/2012-8/31/2012 Active Days: 175	84.70	182.81	339.14	**0.43**	**1,642.87**	9.75	1,652.62	**343.37**	8.88	352.25	54,318.10
Asphalt 03/01/2009-12/01/2012	3.03	17.75	11.54	0.00	0.01	1.55	1.56	0.00	1.43	1.43	1,632.85
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.86	17.34	10.24	0.00	0.00	1.53	1.53	0.00	1.41	1.41	1,418.81
Paving On Road Diesel	0.03	0.34	0.13	0.00	0.00	0.01	0.02	0.00	0.01	0.01	59.43
Paving Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	154.61
Building 03/01/2009-11/01/2012	14.34	76.52	280.63	0.42	1.79	4.08	5.87	0.64	3.67	4.31	42,653.15
Building Off Road Diesel	3.48	20.42	13.62	0.00	0.00	1.42	1.42	0.00	1.31	1.31	2,259.28
Building Vendor Trips	3.80	42.90	36.53	0.10	0.36	1.71	2.07	0.12	1.57	1.69	10,098.64
Building Worker Trips	7.06	13.20	230.47	0.32	1.44	0.95	2.38	0.52	0.79	1.31	30,295.23
Coating 06/01/2009-12/01/2012	56.98	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25
Architectural Coating	56.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25
Mass Grading 01/01/2009-09/01/2012	10.35	88.49	46.06	0.01	1,641.06	4.11	1,645.18	342.73	3.78	346.51	9,913.84
Mass Grading Dust	0.00	0.00	0.00	0.00	1,641.02	0.00	1,641.02	342.71	0.00	342.71	0.00
Mass Grading Off Road Diesel	9.94	83.94	42.08	0.00	0.00	3.94	3.94	0.00	3.62	3.62	8,842.87
Mass Grading On Road Diesel	0.34	4.42	1.63	0.01	0.03	0.17	0.19	0.01	0.15	0.16	761.76

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Mass Grading Worker Trips	0.07	0.13	2.35	0.00	0.01	0.01	0.02	0.01	0.01	0.01	309.22
Time Slice 9/3/2012-11/1/2012 Active Days: 44	74.35	94.32	293.07	0.42	1.81	5.64	7.44	0.64	5.10	5.75	44,404.25
Asphalt 03/01/2009-12/01/2012	3.03	17.75	11.54	0.00	0.01	1.55	1.56	0.00	1.43	1.43	1,632.85
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.86	17.34	10.24	0.00	0.00	1.53	1.53	0.00	1.41	1.41	1,418.81
Paving On Road Diesel	0.03	0.34	0.13	0.00	0.00	0.01	0.02	0.00	0.01	0.01	59.43
Paving Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	154.61
Building 03/01/2009-11/01/2012	14.34	76.52	280.63	0.42	1.79	4.08	5.87	0.64	3.67	4.31	42,653.15
Building Off Road Diesel	3.48	20.42	13.62	0.00	0.00	1.42	1.42	0.00	1.31	1.31	2,259.28
Building Vendor Trips	3.80	42.90	36.53	0.10	0.36	1.71	2.07	0.12	1.57	1.69	10,098.64
Building Worker Trips	7.06	13.20	230.47	0.32	1.44	0.95	2.38	0.52	0.79	1.31	30,295.23
Coating 06/01/2009-12/01/2012	56.98	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25
Architectural Coating	56.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25
Time Slice 11/2/2012-11/30/2012 Active Days: 21	60.01	17.80	12.44	0.00	0.01	1.56	1.57	0.01	1.43	1.44	1,751.11
Asphalt 03/01/2009-12/01/2012	3.03	17.75	11.54	0.00	0.01	1.55	1.56	0.00	1.43	1.43	1,632.85
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.86	17.34	10.24	0.00	0.00	1.53	1.53	0.00	1.41	1.41	1,418.81
Paving On Road Diesel	0.03	0.34	0.13	0.00	0.00	0.01	0.02	0.00	0.01	0.01	59.43
Paving Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	154.61
Coating 06/01/2009-12/01/2012	56.98	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25
Architectural Coating	56.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25

Phase Assumptions

Phase: Mass Grading 1/1/2009 - 9/1/2012 - Grading
Total Acres Disturbed: 373
Maximum Daily Acreage Disturbed: 62.16
Fugitive Dust Level of Detail: Default
26.4 lbs per acre-day
On Road Truck Travel (VMT): 179.73
Off-Road Equipment:
1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/1/2009 - 12/1/2012 - Default Paving Description
Acres to be Paved: 38.32
Off-Road Equipment:
1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 3/1/2009 - 11/1/2012 - Default Building Construction Description
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day
3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 6/1/2009 - 12/1/2012 - Type Your Description Here
Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100
Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50
Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250
Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100
Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250
Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-2/27/2009 Active Days: 42	12.33	107.35	54.55	0.01	110.71	5.22	115.93	23.13	4.80	27.93	9,914.72
Mass Grading 01/01/2009-09/01/2012	12.33	107.35	54.55	0.01	110.71	5.22	115.93	23.13	4.80	27.93	9,914.72
Mass Grading Dust	0.00	0.00	0.00	0.00	110.67	0.00	110.67	23.11	0.00	23.11	0.00
Mass Grading Off Road Diesel	11.80	101.10	49.35	0.00	0.00	4.97	4.97	0.00	4.57	4.57	8,842.87
Mass Grading On Road Diesel	0.43	6.07	2.21	0.01	0.03	0.24	0.27	0.01	0.23	0.23	761.76
Mass Grading Worker Trips	0.10	0.18	2.99	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.09

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Time Slice 3/2/2009-5/29/2009 Active Days: 65	34.62	229.06	420.87	0.43	112.51	12.14	124.65	23.77	11.09	34.86	54,284.79
Asphalt 03/01/2009-12/01/2012	3.57	20.70	12.26	0.00	0.01	1.76	1.77	0.00	1.62	1.62	1,633.29
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.39	20.13	10.59	0.00	0.00	1.74	1.74	0.00	1.60	1.60	1,418.81
Paving On Road Diesel	0.03	0.47	0.17	0.00	0.00	0.02	0.02	0.00	0.02	0.02	59.43
Paving Worker Trips	0.05	0.09	1.50	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.05
Building 03/01/2009-11/01/2012	18.72	101.02	354.06	0.42	1.79	5.16	6.96	0.64	4.67	5.31	42,736.78
Building Off Road Diesel	4.37	24.71	14.63	0.00	0.00	1.81	1.81	0.00	1.67	1.67	2,259.28
Building Vendor Trips	4.85	58.68	46.17	0.10	0.36	2.41	2.76	0.12	2.21	2.33	10,096.46
Building Worker Trips	9.50	17.63	293.26	0.32	1.44	0.94	2.38	0.52	0.79	1.31	30,381.05
Mass Grading 01/01/2009-09/01/2012	12.33	107.35	54.55	0.01	110.71	5.22	115.93	23.13	4.80	27.93	9,914.72
Mass Grading Dust	0.00	0.00	0.00	0.00	110.67	0.00	110.67	23.11	0.00	23.11	0.00
Mass Grading Off Road Diesel	11.80	101.10	49.35	0.00	0.00	4.97	4.97	0.00	4.57	4.57	8,842.87
Mass Grading On Road Diesel	0.43	6.07	2.21	0.01	0.03	0.24	0.27	0.01	0.23	0.23	761.76
Mass Grading Worker Trips	0.10	0.18	2.99	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.09
Time Slice 6/1/2009-12/31/2009 Active Days: 154	43.88	**229.13**	**422.02**	**0.43**	112.52	**12.15**	124.66	23.77	**11.09**	34.86	**54,403.38**
Asphalt 03/01/2009-12/01/2012	3.57	20.70	12.26	0.00	0.01	1.76	1.77	0.00	1.62	1.62	1,633.29
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.39	20.13	10.59	0.00	0.00	1.74	1.74	0.00	1.60	1.60	1,418.81
Paving On Road Diesel	0.03	0.47	0.17	0.00	0.00	0.02	0.02	0.00	0.02	0.02	59.43
Paving Worker Trips	0.05	0.09	1.50	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.05
Building 03/01/2009-11/01/2012	18.72	101.02	354.06	0.42	1.79	5.16	6.96	0.64	4.67	5.31	42,736.78
Building Off Road Diesel	4.37	24.71	14.63	0.00	0.00	1.81	1.81	0.00	1.67	1.67	2,259.28
Building Vendor Trips	4.85	58.68	46.17	0.10	0.36	2.41	2.76	0.12	2.21	2.33	10,096.46
Building Worker Trips	9.50	17.63	293.26	0.32	1.44	0.94	2.38	0.52	0.79	1.31	30,381.05
Coating 06/01/2009-12/01/2012	9.26	0.07	1.14	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.59
Architectural Coating	9.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.14	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.59
Mass Grading 01/01/2009-09/01/2012	12.33	107.35	54.55	0.01	110.71	5.22	115.93	23.13	4.80	27.93	9,914.72
Mass Grading Dust	0.00	0.00	0.00	0.00	110.67	0.00	110.67	23.11	0.00	23.11	0.00
Mass Grading Off Road Diesel	11.80	101.10	49.35	0.00	0.00	4.97	4.97	0.00	4.57	4.57	8,842.87
Mass Grading On Road Diesel	0.43	6.07	2.21	0.01	0.03	0.24	0.27	0.01	0.23	0.23	761.76
Mass Grading Worker Trips	0.10	0.18	2.99	0.00	0.01	0.01	0.02	0.01	0.01	0.01	310.09
Time Slice 1/1/2010-12/31/2010 Active Days: 261	47.89	213.66	391.79	**0.43**	112.52	11.38	123.89	23.77	10.38	34.15	54,374.23
Asphalt 03/01/2009-12/01/2012	3.38	19.68	12.01	0.00	0.01	1.70	1.71	0.00	1.57	1.57	1,633.14
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.20	19.17	10.47	0.00	0.00	1.68	1.68	0.00	1.55	1.55	1,418.81
Paving On Road Diesel	0.03	0.43	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	59.43
Paving Worker Trips	0.04	0.08	1.38	0.00	0.01	0.00	0.01	0.00	0.00	0.01	154.90
Building 03/01/2009-11/01/2012	17.17	92.71	327.34	0.42	1.79	4.78	6.58	0.64	4.32	4.96	42,708.19
Building Off Road Diesel	4.08	23.31	14.31	0.00	0.00	1.67	1.67	0.00	1.54	1.54	2,259.28
Building Vendor Trips	4.50	53.44	42.92	0.10	0.36	2.17	2.52	0.12	1.99	2.11	10,097.01
Building Worker Trips	8.59	15.96	270.11	0.32	1.44	0.95	2.38	0.52	0.79	1.31	30,351.90
Coating 06/01/2009-12/01/2012	15.66	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.48
Architectural Coating	15.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.48
Mass Grading 01/01/2009-09/01/2012	11.68	101.22	51.39	0.01	110.71	4.89	115.60	23.13	4.50	27.62	9,914.42
Mass Grading Dust	0.00	0.00	0.00	0.00	110.67	0.00	110.67	23.11	0.00	23.11	0.00
Mass Grading Off Road Diesel	11.19	95.53	46.62	0.00	0.00	4.66	4.66	0.00	4.29	4.29	8,842.87
Mass Grading On Road Diesel	0.40	5.52	2.01	0.01	0.03	0.22	0.24	0.01	0.20	0.21	761.76
Mass Grading Worker Trips	0.09	0.16	2.76	0.00	0.01	0.01	0.02	0.01	0.01	0.01	309.80
Time Slice 1/3/2011-12/30/2011 Active Days: 260	45.51	198.02	364.53	**0.43**	112.52	10.58	123.09	23.77	9.65	33.42	54,350.87
Asphalt 03/01/2009-12/01/2012	3.19	18.71	11.76	0.00	0.01	1.64	1.65	0.00	1.51	1.51	1,633.02
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.02	18.25	10.34	0.00	0.00	1.62	1.62	0.00	1.49	1.49	1,418.81
Paving On Road Diesel	0.03	0.39	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	59.43
Paving Worker Trips	0.04	0.07	1.27	0.00	0.01	0.00	0.01	0.00	0.00	0.01	154.78
Building 03/01/2009-11/01/2012	15.73	84.46	303.19	0.42	1.79	4.46	6.25	0.64	4.02	4.66	42,685.29
Building Off Road Diesel	3.77	21.85	13.95	0.00	0.00	1.57	1.57	0.00	1.45	1.45	2,259.28
Building Vendor Trips	4.15	48.11	39.68	0.10	0.36	1.94	2.29	0.12	1.77	1.89	10,097.79
Building Worker Trips	7.81	14.50	249.56	0.32	1.44	0.95	2.38	0.52	0.79	1.31	30,328.22
Coating 06/01/2009-12/01/2012	15.66	0.06	0.97	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.38
Architectural Coating	15.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	0.97	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.38

Mass Grading 01/01/2009-09/01/2012	10.93	94.79	48.61	0.01	110.71	4.48	115.18	23.13	4.12	27.24	9,914.18
Mass Grading Dust	0.00	0.00	0.00	0.00	110.67	0.00	110.67	23.11	0.00	23.11	0.00
Mass Grading Off Road Diesel	10.48	89.68	44.24	0.00	0.00	4.27	4.27	0.00	3.93	3.93	8,842.87
Mass Grading On Road Diesel	0.37	4.96	1.82	0.01	0.03	0.19	0.22	0.01	0.18	0.19	761.76
Mass Grading Worker Trips	0.08	0.15	2.55	0.00	0.01	0.01	0.02	0.01	0.01	0.01	309.55
Time Slice 1/2/2012-8/31/2012 Active Days: 175	42.18	182.81	339.14	**0.43**	112.52	9.75	122.26	23.77	8.88	32.65	54,318.10
Asphalt 03/01/2009-12/01/2012	3.03	17.75	11.54	0.00	0.01	1.55	1.56	0.00	1.43	1.43	1,632.85
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.86	17.34	10.24	0.00	0.00	1.53	1.53	0.00	1.41	1.41	1,418.81
Paving On Road Diesel	0.03	0.34	0.13	0.00	0.00	0.01	0.02	0.00	0.01	0.01	59.43
Paving Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	154.61
Building 03/01/2009-11/01/2012	14.34	76.52	280.63	0.42	1.79	4.08	5.87	0.64	3.67	4.31	42,653.15
Building Off Road Diesel	3.48	20.42	13.62	0.00	0.00	1.42	1.42	0.00	1.31	1.31	2,259.28
Building Vendor Trips	3.80	42.90	36.53	0.10	0.36	1.71	2.07	0.12	1.57	1.69	10,098.64
Building Worker Trips	7.06	13.20	230.47	0.32	1.44	0.95	2.38	0.52	0.79	1.31	30,295.23
Coating 06/01/2009-12/01/2012	14.46	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25
Architectural Coating	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25
Mass Grading 01/01/2009-09/01/2012	10.35	88.49	46.06	0.01	110.71	4.11	114.82	23.13	3.78	26.91	9,913.84
Mass Grading Dust	0.00	0.00	0.00	0.00	110.67	0.00	110.67	23.11	0.00	23.11	0.00
Mass Grading Off Road Diesel	9.94	83.94	42.08	0.00	0.00	3.94	3.94	0.00	3.62	3.62	8,842.87
Mass Grading On Road Diesel	0.34	4.42	1.63	0.01	0.03	0.17	0.19	0.01	0.15	0.16	761.76
Mass Grading Worker Trips	0.07	0.13	2.35	0.00	0.01	0.01	0.02	0.01	0.01	0.01	309.22
Time Slice 9/3/2012-11/1/2012 Active Days: 44	31.83	94.32	293.07	0.42	1.81	5.64	7.44	0.64	5.10	5.75	44,404.25
Asphalt 03/01/2009-12/01/2012	3.03	17.75	11.54	0.00	0.01	1.55	1.56	0.00	1.43	1.43	1,632.85
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.86	17.34	10.24	0.00	0.00	1.53	1.53	0.00	1.41	1.41	1,418.81
Paving On Road Diesel	0.03	0.34	0.13	0.00	0.00	0.01	0.02	0.00	0.01	0.01	59.43
Paving Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	154.61
Building 03/01/2009-11/01/2012	14.34	76.52	280.63	0.42	1.79	4.08	5.87	0.64	3.67	4.31	42,653.15
Building Off Road Diesel	3.48	20.42	13.62	0.00	0.00	1.42	1.42	0.00	1.31	1.31	2,259.28
Building Vendor Trips	3.80	42.90	36.53	0.10	0.36	1.71	2.07	0.12	1.57	1.69	10,098.64
Building Worker Trips	7.06	13.20	230.47	0.32	1.44	0.95	2.38	0.52	0.79	1.31	30,295.23
Coating 06/01/2009-12/01/2012	14.46	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25
Architectural Coating	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25
Time Slice 11/2/2012-11/30/2012 Active Days: 21	17.49	17.80	12.44	0.00	0.01	1.56	1.57	0.01	1.43	1.44	1,751.11
Asphalt 03/01/2009-12/01/2012	3.03	17.75	11.54	0.00	0.01	1.55	1.56	0.00	1.43	1.43	1,632.85
Paving Off-Gas	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.86	17.34	10.24	0.00	0.00	1.53	1.53	0.00	1.41	1.41	1,418.81
Paving On Road Diesel	0.03	0.34	0.13	0.00	0.00	0.01	0.02	0.00	0.01	0.01	59.43
Paving Worker Trips	0.04	0.07	1.18	0.00	0.01	0.00	0.01	0.00	0.00	0.01	154.61
Coating 06/01/2009-12/01/2012	14.46	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25
Architectural Coating	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.90	0.00	0.01	0.00	0.01	0.00	0.00	0.01	118.25

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2009 - 9/1/2012 - Grading

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Architectural Coating 6/1/2009 - 12/1/2012 - Type Your Description Here

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

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AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	2.13	28.57	18.94	0.00	0.05	0.05	35,220.74
Hearth - No Summer Emissions							
Landscape	1.70	0.24	20.85	0.00	0.06	0.06	35.72
Consumer Products	63.92						
Architectural Coatings	14.24						
TOTALS (lbs/day, unmitigated)	81.99	28.81	39.79	0.00	0.11	0.11	35,256.46

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	17.24	22.45	168.08	0.19	29.39	5.90	18,173.45
Condo/townhouse high rise	18.85	23.82	178.39	0.20	31.19	6.26	19,287.92
Elementary school	14.58	11.50	84.32	0.09	14.65	2.94	9,051.80
City park	0.19	0.17	1.23	0.00	0.22	0.04	136.08
Hotel	19.84	26.71	192.51	0.21	34.05	6.83	20,958.99
Regnl shop. center	40.38	59.71	429.90	0.47	75.37	15.13	46,441.85
General office building	5.08	7.74	56.99	0.06	10.09	2.03	6,222.92
Office park	60.50	92.60	686.18	0.76	121.50	24.39	74,942.29
Retail	16.69	24.88	179.14	0.20	31.41	6.31	19,352.16
Retail	118.12	171.91	1,237.77	1.36	217.01	43.58	133,715.84
Office	5.93	9.02	66.41	0.07	11.76	2.36	7,251.42
Office	8.81	13.29	97.80	0.11	17.32	3.48	10,678.01
Office	7.33	11.09	81.66	0.09	14.46	2.90	8,916.07
TOTALS (lbs/day, unmitigated)	333.54	474.89	3,460.38	3.81	608.42	122.15	375,128.80

Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 49.54 Nonresidential Trip % Reduction: 7.37

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments low rise	35.12	3.39	dwelling units	562.00	1,905.85	16,857.27
Condo/townhouse high rise	10.69	2.96	dwelling units	684.00	2,022.73	17,891.03
Elementary school		1.19	students	1,100.00	1,314.40	8,404.71
City park		1.47	acres	12.45	18.34	127.07
Hotel		7.57	rooms	413.00	3,125.49	19,530.44
Regnl shop. center		57.03	1000 sq ft	132.31	7,545.84	43,232.10
General office building		14.57	1000 sq ft	48.78	710.75	5,790.54
Office park		11.82	1000 sq ft	660.61	7,808.04	69,697.47
Retail		91.38	1000 sq ft	34.41	3,144.33	18,014.67
Retail		32.27	1000 sq ft	673.22	21,726.07	124,474.30
Office		13.93	1000 sq ft	59.45	828.22	6,747.58
Office		12.40	1000 sq ft	98.33	1,219.59	9,936.08
Office		13.10	1000 sq ft	77.75	1,018.35	8,296.56
					52,388.00	348,999.82

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	46.7	0.6	99.2	0.2
Light Truck < 3750 lbs	10.0	2.0	94.0	4.0
Light Truck 3751-5750 lbs	20.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	11.3	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.0	0.0	80.0	20.0
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	42.9	57.1
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	1.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0

Motorcycle	4.2	59.5	40.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.3	0.0	92.3	7.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0
Retail				2.0	1.0	97.0
Retail				2.0	1.0	97.0
Office				35.0	17.5	47.5
Office				35.0	17.5	47.5
Office				35.0	17.5	47.5

Operational Changes to Defaults

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Tanya's Stuff\WestValley AQ"HRA\WestValleySP.urb924

Project Name: West Valley S.P.

Project Location: San Bernadino County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	91.61	229.13	422.02	0.43	1,491.07	12.15	1,503.22	311.67	11.09	322.76	54,403.38
2009 TOTALS (lbs/day mitigated)	43.88	229.13	422.02	0.43	102.28	12.15	114.43	21.63	11.09	32.73	54,403.38
2010 TOTALS (lbs/day unmitigated)	89.21	213.66	391.79	0.43	1,491.07	11.38	1,502.45	311.67	10.38	322.05	54,374.23
2010 TOTALS (lbs/day mitigated)	47.89	213.66	391.79	0.43	102.28	11.38	113.66	21.63	10.38	32.02	54,374.23
2011 TOTALS (lbs/day unmitigated)	86.84	198.02	364.53	0.43	1,491.07	10.58	1,501.65	311.67	9.65	321.31	54,350.87
2011 TOTALS (lbs/day mitigated)	45.51	198.02	364.53	0.43	102.28	10.58	112.86	21.63	9.65	31.28	54,350.87
2012 TOTALS (lbs/day unmitigated)	84.70	182.81	339.14	0.43	1,491.07	9.75	1,500.82	311.67	8.88	320.55	54,318.10
2012 TOTALS (lbs/day mitigated)	42.18	182.81	339.14	0.43	102.28	9.75	112.03	21.63	8.88	30.52	54,318.10

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	275.45	43.38	559.60	1.51	83.86	80.73	55,192.43

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	368.44	561.28	3,416.06	3.24	608.42	122.15	342,235.54

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	643.89	604.66	3,975.66	4.75	692.28	202.88	397,427.97

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	2.13	28.57	18.94	0.00	0.05	0.05	35,220.74
Hearth	195.16	14.81	540.66	1.51	83.81	80.68	19,971.69
Landscaping - No Winter Emissions							
Consumer Products	63.92						
Architectural Coatings	14.24						
TOTALS (lbs/day, unmitigated)	275.45	43.38	559.60	1.51	83.86	80.73	55,192.43

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	17.27	26.56	163.41	0.16	29.39	5.90	16,584.65
Condo/townhouse high rise	18.58	28.19	173.44	0.17	31.19	6.26	17,601.69
Elementary school	12.03	13.59	83.32	0.08	14.65	2.94	8,259.66
City park	0.16	0.20	1.22	0.00	0.22	0.04	124.10
Hotel	21.33	31.56	191.06	0.18	34.05	6.83	19,118.25
Regnl shop. center	46.87	70.52	429.06	0.40	75.37	15.13	42,367.22
General office building	5.66	9.16	55.55	0.05	10.09	2.03	5,677.16
Office park	66.79	109.57	665.23	0.65	121.50	24.39	68,373.29
Retail	19.47	29.38	178.79	0.17	31.41	6.31	17,654.28
Retail	135.80	203.04	1,235.34	1.15	217.01	43.58	121,984.13
Office	6.60	10.67	64.73	0.06	11.76	2.36	6,615.46
Office	9.75	15.72	95.32	0.09	17.32	3.48	9,741.53
Office	8.13	13.12	79.59	0.08	14.46	2.90	8,134.12
TOTALS (lbs/day, unmitigated)	368.44	561.28	3,416.06	3.24	608.42	122.15	342,235.54

Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 49.54   Nonresidential Trip % Reduction: 7.37

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Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments low rise	35.12	3.39	dwelling units	562.00	1,905.85	16,857.27
Condo/townhouse high rise	10.69	2.96	dwelling units	684.00	2,022.73	17,891.03
Elementary school		1.19	students	1,100.00	1,314.40	8,404.71
City park		1.47	acres	12.45	18.34	127.07
Hotel		7.57	rooms	413.00	3,125.49	19,530.44
Regnl shop. center		57.03	1000 sq ft	132.31	7,545.84	43,232.10
General office building		14.57	1000 sq ft	48.78	710.75	5,790.54
Office park		11.82	1000 sq ft	660.61	7,808.04	69,697.47
Retail		91.38	1000 sq ft	34.41	3,144.33	18,014.67
Retail		32.27	1000 sq ft	673.22	21,726.07	124,474.30
Office		13.93	1000 sq ft	59.45	828.22	6,747.58
Office		12.40	1000 sq ft	98.33	1,219.59	9,936.08
Office		13.10	1000 sq ft	77.75	1,018.35	8,296.56
					52,388.00	348,999.82

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	46.7	0.6	99.2	0.2
Light Truck < 3750 lbs	10.0	2.0	94.0	4.0
Light Truck 3751-5750 lbs	20.8	0.5	99.5	0.0
Med Truck 5751-8500 lbs	11.3	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.0	0.0	80.0	20.0
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	42.9	57.1
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	1.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.2	59.5	40.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.3	0.0	92.3	7.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0
Retail				2.0	1.0	97.0
Retail				2.0	1.0	97.0
Office				35.0	17.5	47.5
Office				35.0	17.5	47.5
Office				35.0	17.5	47.5

Operational Changes to Defaults

M E M O R A N D U M

Mestre Greve Associates

Date : March 16, 2009

To : Nancy Ferguson, Michael Brandman Associates

From : Tanya Moon
Mestre Greve Associates

Subject: Consistency Findings for West Valley Specific Plan Amendment (WVSPA). City of Colton. Report #08-130.

Dear Nancy,

The purpose of this letter is to address the AQMP (Criterion 2) consistency findings for the WVSPA project in greater details. The consistency findings include comparing emissions between the WVSPA and the City of Colton Existing General Plan (Existing G.P.) To calculate the Existing G.P. emissions, default URBEMIS2007 variables were used except the trip generation rate. The Existing G.P. land use and trip generation data were provided by Kunzman Associates, March 12, 2009. The Existing G.P. comprises a total of 171,740 square feet of regional retail uses, 254,070 square feet of hospital retail medical support, and 202.9 acres of business industrial park; no residential uses were proposed. Kunzman Associates determined the daily trip generation associated with the Existing G.P to be 47,342 trips per day. The results of the URBEMIS modeling and the consistency findings of the project are presented in the following section.

Criterion 2 - Exceed Assumptions in the AQMP?
Consistency with the AQMP assumptions is determined by performing an analysis of the project with the assumptions in the AQMP. Thus, the emphasis of this criterion is to insure that the analyses conducted for the project are based on the same forecasts as the AQMP. The Regional Comprehensive Plan and Guide (RCP&G) consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA.

The AQMP assumptions are based upon projections from local general plans. Projects that are consistent with the local general plan are consistent with the AQMP assumptions.

The test for consistency of this project includes analysis of the project emissions based on the traffic information. The traffic modeling methodologies upon which much of the air quality assessment are based on the East Valley Traffic Model, Congestion Management Program (CMP), the ITE Trip Generation, 7th Edition, and the highway Capacity Manual 2000. The project is included in the traffic volumes for opening year 2012 and horizon year 2030 forecast including regional growth.

Additionally, the WVSPA is revising and amending a portion of the West Subarea of the existing WVSP; the East Subareas will remain unaffected by this amendment. Of the West Subarea, approximately 373 acres of the total 476 acres is affected by this amendment. The test for consistency of this project includes comparing the WVSPA emissions with the Existing G.P. emissions for buildout conditions (i.e., 2030). Table A-1 presents the emission results. Output files from the URBEMIS2007 program are presented in the appendix.

Table A-1
COMPARISON OF WVSP AND EXISTING G.P. EMISSIONS

Source	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Existing General Plan - Year 2030						
Area Source Emissions	4.0	4.2	3.5	0.0	0.0	0.0
Operational (vehicle) Emissions	190.4	223.3	1706.2	4.4	818.9	159.5
Total Existing G.P. Emissions	**194**	**228**	**1,710**	**4**	**819**	**160**
Proposed WVSPA Emissions - Year 2030						
Area Source Emissions	275.5	43.4	559.6	1.5	83.9	80.7
Operational (vehicle) Emissions	175.2	170.5	1325.9	3.3	603.7	117.8
1) Total Project Emissions	**451**	**214**	**1,885**	**5**	**688**	**199**
2) Project Emissions-100% Natural Gas Fireplaces	**256**	**206**	**1,348**	**3**	**604**	**118**
SCQAMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
1) Project Net Change in Emissions	**256**	**-14**	**176**	**0**	**-131**	**39**
2) Project Net Change in Emissions-100% Natural Gas Fireplaces	**62**	**-22**	**-362**	**-1**	**-215**	**-41**

1) Scenario 1 – WVSPA emissions under URBEMIS default assumptions.
2) Scenario 2 – WVSPA emissions with 100% natural gas fireplaces in residential buildings.
Underlined data indicate exceedances.

Table A-1 presents emissions for the Existing G.P. and the WVSPA emissions for two scenarios. Scenario 1 shows the project emissions based on URBEMIS default assumptions. Under Scenario 1, the area source emissions are significant when compared with area source emissions from the Existing G.P., specifically for ROG, CO, PM_{10} and $PM_{2.5}$. This is primarily due to hearth fuel combustion associated with residential uses for the proposed project. URBEMIS default assumptions entail 10% wood stove, 5% wood fireplaces, and 85% natural fireplaces. However, if the use of wood stove and wood fireplaces was eliminated in all residential buildings, and replaced with 100% natural gas fireplaces, the area source emissions would be reduced by approximately 70% for ROG, 96% for CO, 99% for PM_{10} and $PM_{2.5}$. This is illustrated in Scenario 2 project emissions.

The last two rows of Table A-1 present the project net change in emissions for Scenarios 1 and 2 when compared with the Existing G.P. The results show project net increases over the Existing G.P. in ROG, CO and PM2.5 for Scenario 1 and ROG for Scenario 2, as well as project net decreases for the other criterion pollutants.

The WVSPA has been developed to implement goals and policies of the City of Colton Existing G.P., and thus, are compatible with the City's General Plan. However, since the proposed WVSP emissions will be higher then Existing G.P. emissions, the WVSPA is not found to be consistent with the AQMP. Therefore, the second criterion is not met for consistency with the AQMP. If the project were mitigated to only allow natural gas fireplaces, then all emissions would be reduced except ROG. For the mitigated scenario, it could be argued that since the emissions are being reduced to a greater extent than they are being increased, that the project with mitigation is consistent with the AQMP.

If you have any questions, please do not hesitate to call.

APPENDIX

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\Environmental Svcs\Desktop\EnvSrvcShare\URBEMIS_PROJECTS\Colton exGP.urb924

Project Name: City of Colton Existing General Plan

Project Location: San Bernadino County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.98	4.16	3.49	0.00	0.01	0.01	4,991.19

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	190.39	223.34	1,706.16	4.44	818.87	159.49	468,366.04

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	194.37	227.50	1,709.65	4.44	818.88	159.50	473,357.23

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.30	4.16	3.49	0.00	0.01	0.01	4,991.19
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping - No Winter Emissions							
Consumer Products	0.00						
Architectural Coatings	3.68						
TOTALS (lbs/day, unmitigated)	3.98	4.16	3.49	0.00	0.01	0.01	4,991.19

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Regnl shop. center	31.86	37.39	281.53	0.74	136.33	26.53	77,698.77
Hospital	44.38	51.87	395.25	1.03	189.99	37.00	108,601.50
Industrial park	114.15	134.08	1,029.38	2.67	492.55	95.96	282,065.77
TOTALS (lbs/day, unmitigated)	190.39	223.34	1,706.16	4.44	818.87	159.49	468,366.04

Operational Settings:

Does not include correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2030 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		51.18	1000 sq ft	171.74	8,789.65	78,869.56
Hospital		44.08	1000 sq ft	254.07	11,199.41	109,894.17
Industrial park		134.81	1000 sq ft	202.90	27,352.95	284,874.11

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.2	0.0	100.0	0.0
Light Truck < 3750 lbs	9.9	0.0	99.0	1.0
Light Truck 3751-5750 lbs	21.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	12.1	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.3	0.0	82.6	17.4
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.1	0.0	18.2	81.8
Heavy-Heavy Truck 33,001-60,000 lbs	2.1	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.0	32.5	67.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.7	0.0	88.2	11.8

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
Hospital				25.0	12.5	62.5
Industrial park				41.5	20.8	37.8

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\Environmental Svcs\Desktop\EnvSrvcShare\URBEMIS_PROJECTS\WestValleySP 2030.urb924

Project Name: West Valley S.P. 2030

Project Location: San Bernadino County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	91.61	229.13	422.02	0.43	1,642.87	12.15	1,655.02	343.37	11.09	354.46	54,403.38
2009 TOTALS (lbs/day mitigated)	43.88	229.13	422.02	0.43	112.52	12.15	124.66	23.77	11.09	34.86	54,403.38
2010 TOTALS (lbs/day unmitigated)	89.21	213.66	391.79	0.43	1,642.87	11.38	1,654.25	343.37	10.38	353.75	54,374.23
2010 TOTALS (lbs/day mitigated)	47.89	213.66	391.79	0.43	112.52	11.38	123.89	23.77	10.38	34.15	54,374.23
2011 TOTALS (lbs/day unmitigated)	86.84	198.02	364.53	0.43	1,642.87	10.58	1,653.45	343.37	9.65	353.02	54,350.87
2011 TOTALS (lbs/day mitigated)	45.51	198.02	364.53	0.43	112.52	10.58	123.09	23.77	9.65	33.42	54,350.87
2012 TOTALS (lbs/day unmitigated)	84.70	182.81	339.14	0.43	1,642.87	9.75	1,652.62	343.37	8.88	352.25	54,318.10
2012 TOTALS (lbs/day mitigated)	42.18	182.81	339.14	0.43	112.52	9.75	122.26	23.77	8.88	32.65	54,318.10

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	275.45	43.38	559.60	1.51	83.86	80.73	55,192.43

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	175.15	170.46	1,325.89	3.28	603.67	117.78	347,008.06

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	450.60	213.84	1,885.49	4.79	687.53	198.51	402,200.49

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	2.13	28.57	18.94	0.00	0.05	0.05	35,220.74
Hearth	195.16	14.81	540.66	1.51	83.81	80.68	19,971.69
Landscaping - No Winter Emissions							
Consumer Products	63.92						
Architectural Coatings	14.24						
TOTALS (lbs/day, unmitigated)	275.45	43.38	559.60	1.51	83.86	80.73	55,192.43

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	8.32	8.05	63.68	0.16	29.16	5.69	16,817.07
Condo/townhouse high rise	8.99	8.55	67.59	0.17	30.95	6.04	17,848.37
Elementary school	6.17	4.13	32.32	0.08	14.54	2.84	8,374.38
City park	0.08	0.06	0.47	0.00	0.22	0.04	125.84
Hotel	10.23	9.59	74.07	0.18	33.78	6.59	19,384.73
Regnl shop. center	22.13	21.43	166.06	0.41	74.78	14.59	42,954.83
General office building	2.67	2.78	21.63	0.05	10.02	1.95	5,756.91

Office park	31.56	33.24	259.41	0.66	120.55	23.52	69,335.69
Retail	9.18	8.93	69.20	0.17	31.16	6.08	17,899.13
Retail	64.25	61.71	478.13	1.17	215.30	42.01	123,675.97
Office	3.12	3.24	25.21	0.06	11.67	2.28	6,708.39
Office	4.61	4.77	37.12	0.09	17.19	3.35	9,878.37
Office	3.84	3.98	31.00	0.08	14.35	2.80	8,248.38
TOTALS (lbs/day, unmitigated)	175.15	170.46	1,325.89	3.28	603.67	117.78	347,008.06

Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 49.54   Nonresidential Trip % Reduction: 7.37

Analysis Year: 2030 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments low rise	35.12	3.39	dwelling units	562.00	1,905.85	16,857.27
Condo/townhouse high rise	10.69	2.96	dwelling units	684.00	2,022.73	17,891.03
Elementary school		1.19	students	1,100.00	1,314.40	8,404.71
City park		1.47	acres	12.45	18.34	127.07
Hotel		7.57	rooms	413.00	3,125.49	19,530.44
Regnl shop. center		57.03	1000 sq ft	132.31	7,545.84	43,232.10
General office building		14.57	1000 sq ft	48.78	710.75	5,790.54
Office park		11.82	1000 sq ft	660.61	7,808.04	69,697.47
Retail		91.38	1000 sq ft	34.41	3,144.33	18,014.67
Retail		32.27	1000 sq ft	673.22	21,726.07	124,474.30
Office		13.93	1000 sq ft	59.45	828.22	6,747.58
Office		12.40	1000 sq ft	98.33	1,219.59	9,936.08
Office		13.10	1000 sq ft	77.75	1,018.35	8,296.56
					52,388.00	348,999.82

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.2	0.0	100.0	0.0
Light Truck < 3750 lbs	9.9	0.0	99.0	1.0
Light Truck 3751-5750 lbs	21.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	12.1	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.3	0.0	82.6	17.4
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.1	0.0	18.2	81.8
Heavy-Heavy Truck 33,001-60,000 lbs	2.1	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.0	32.5	67.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.7	0.0	88.2	11.8

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Elementary school	20.0	10.0	70.0
City park	5.0	2.5	92.5
Hotel	5.0	2.5	92.5
Regnl shop. center	2.0	1.0	97.0
General office building	35.0	17.5	47.5
Office park	48.0	24.0	28.0
Retail	2.0	1.0	97.0
Retail	2.0	1.0	97.0
Office	35.0	17.5	47.5
Office	35.0	17.5	47.5
Office	35.0	17.5	47.5

Operational Changes to Defaults

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\Environmental Svcs\Desktop\EnvSrvcShare\URBEMIS_PROJECTS\WestValleySP-100%natural gas fireplaces.urb924

Project Name: West Valley S.P.-2030

Project Location: San Bernadino County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	80.69	35.46	21.87	0.04	0.61	0.60	44,016.03

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	175.15	170.46	1,325.89	3.28	603.67	117.78	347,008.06

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	255.84	205.92	1,347.76	3.32	604.28	118.38	391,024.09

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	2.13	28.57	18.94	0.00	0.05	0.05	35,220.74
Hearth	0.40	6.89	2.93	0.04	0.56	0.55	8,795.29
Landscaping - No Winter Emissions							
Consumer Products	63.92						
Architectural Coatings	14.24						
TOTALS (lbs/day, unmitigated)	80.69	35.46	21.87	0.04	0.61	0.60	44,016.03

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 100%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments low rise	8.32	8.05	63.68	0.16	29.16	5.69	16,817.07
Condo/townhouse high rise	8.99	8.55	67.59	0.17	30.95	6.04	17,848.37
Elementary school	6.17	4.13	32.32	0.08	14.54	2.84	8,374.38
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Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
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Light Truck < 3750 lbs	9.9	0.0	99.0	1.0
Light Truck 3751-5750 lbs	21.8	0.0	100.0	0.0
Med Truck 5751-8500 lbs	12.1	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.3	0.0	82.6	17.4
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
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Heavy-Heavy Truck 33,001-60,000 lbs	2.1	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.0	32.5	67.5	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.7	0.0	88.2	11.8

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
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Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
City park				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0
Retail				2.0	1.0	97.0

Retail	2.0	1.0	97.0
Office	35.0	17.5	47.5
Office	35.0	17.5	47.5
Office	35.0	17.5	47.5

Operational Changes to Defaults

DIESEL PARTICULATES HEALTH RISK ASSESSMENT:
WEST VALLEY SPECIFIC PLAN AMENDMENT
CITY OF COLTON

Prepared For:

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October 15, 2008
Report #08-139

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LIST OF EXHIBITS

1.0 INTRODUCTION

The West Valley Specific Plan Amendment (WVSPA) project consists of revising and amending a portion of the West Subarea of the existing West Valley Specific Plan (WVSP), while the East Subareas will remain unaffected by this amendment. Of the West Subarea, approximately 373 acres of the total 476 acres is affected by this amendment. Under the WVSPA, a variety of land uses were planned, including a mix of residential and non-residential uses. Residential uses will include both single family and multiple family dwelling units. Non-residential uses will consist of retail uses, including a proposed hotel, a variety of office/business park uses, as well as a school site and open space/parks. A vicinity map is presented in Exhibit 1.

In 1998 the California Air Resources Board (CARB) identified particulate matter from diesel-fueled engines (Diesel Particulate Matter or DPM) as a Toxic Air Contaminant (TAC). As a part of the identification process, CARB's Office of Environmental Health Hazard Assessment (OEHHA) evaluated the potential for DPM to affect human health. The OEHHA found that exposures to DPM resulted in an increased risk of cancer and an increase in chronic noncancer health effects including a greater incidence of cough, labored breathing, chest tightness, wheezing, and bronchitis.

The project site is in proximity to two major sources of DPM. The project is located adjacent to Interstate 10 (I-10) Freeway, which is a major truck route, and the Union Pacific Colton Railyard is located south of the project across the freeway. CARB has identified railyards as a considerable source of DPM emissions and has completed health risk assessments (HRA) for many of the rail yards in the state, including the Union Pacific Colton Railyard. Potential health risks at the uses proposed by the project are reported here based on the results from CARB's railyard study as well as site specific modeling to estimate the risk from the I-10 Freeway.

The project itself is not expected to be a considerable source of DPM. The traffic engineer for the project Kunzman Associates indicates that the commercial uses implemented by project would most likely consist of primarily business parks uses with no industrial or distribution facility uses that would be expected to attract large numbers of diesel trucks. type of trucks associated with business parks is most likely large 2-axle trucks which are predominantly gasoline fueled; there should not be a considerable number of heavy truck trips associated with the proposed business park uses.

At this time, tools and methodologies for assessing DPM impacts are limited, and not all state and federal transportation agencies agree that DPM impacts can be modeled in a meaningful way. This analysis uses interim methodologies developed by the SCAQMD and the ARB. These methodologies are appropriate to develop an estimate of the DPM related impacts upon the project. These methodologies are described in Section 2.2. This analysis is for informational purposes only, since an agreement about the effects of DPM or the methodology to analyze the effects is not generated yet. This is discussed further in the next section, which provides a background discussion on diesel particulates.

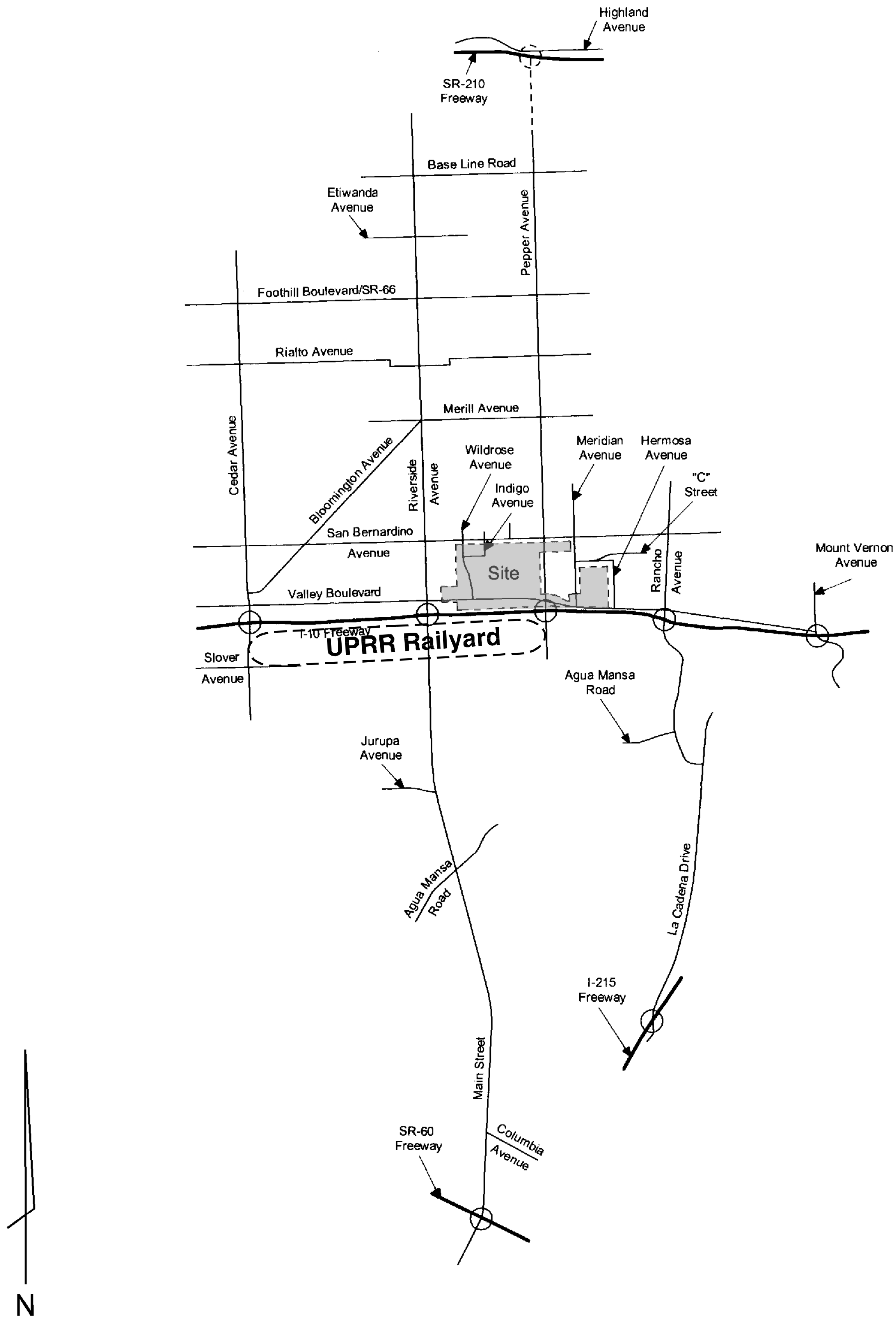


Exhibit 1
Vicinity Map

Mestre Greve Associates

1.1 BACKGROUND ON DIESEL PARTICULATES

DPM has historically been used as a surrogate measure of exposure for all diesel exhaust emissions. Although uncertainty exists as to whether DPM is the most appropriate parameter to correlate with human health effects, it is considered a reasonable choice until a more definitive model regarding the mechanisms of toxicity or mode(s) of action of diesel exhaust becomes available. DPM consists of fine particles (fine particles have a diameter <2.5 μm), including a subgroup of ultrafine particles (ultrafine particles have a diameter <0.1 μm). Collectively, these particles have a large surface area which makes them an excellent medium for absorbing organics. In addition, their small size makes them highly respirable and able to reach the deep lung.

Diesel exhaust emissions vary significantly in chemical composition and particle sizes between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), and fuel formulations (high/low sulfur fuel). Furthermore, there are emission differences between on-road and non-road engines due to older technology of non-road engines. The mass of particles emitted and the organic components of the particles from on-road diesel engines have been reduced over the years. Available data for on-road engines indicate that toxicologically relevant organic components of diesel exhaust emitted from older vehicle engines are still present in emissions from newer engines, though relative amounts have decreased. There is currently insufficient information to characterize the changes in the composition of diesel exhaust from non-road diesel engines over time.

During an exhaustive 10-year scientific process, the OEHHA has found that human exposure to DPM resulted in an increased risk of cancer and chronic non-cancer health effects (i.e., greater incidence of cough, labored breathing, chest tightness, wheezing, and bronchitis). The OEHHA estimated that, based on available studies, the potential cancer risk from exposure to DPM of 1 microgram per cubic meter ($\mu g/m^3$) over a 70-year lifetime ranged from 130 to 2,400 excess cancers per million people. The ARB's Scientific Review Panel (SRP) approved the OEHHA's conclusion concerning health effects and approved these values as the range of risk for DPM. This wide range demonstrates the uncertainty in the cancer risk from DPM.

The SRP concluded that a value of 300 excess cancers per million people per $\mu g/m^3$ of DPM was appropriate as a point estimate of unit risk factor (URF) for DPM. A scientific consensus concerning the appropriate URF for DPM does not exist. In the "Health Assessment Document for Diesel Engine Exhaust" (May 2002), the U.S. Environmental Protection Agency (EPA) determined that the SRP literature did not support the identification of a URF for DPM. The EPA data indicated that the potential cancer risk from exposure to DPM of 1 microgram per cubic meter ($\mu g/m^3$) over a 70-year lifetime could be as high as 10 to 1,000 excess cancers per million. However, a lower risk rate and even zero risk rate cannot be ruled out by the current data.

The OEHHA also concluded that exposure to DPM concentrations greater than 5 $\mu g/m^3$ can result in a number of long-term non-cancer heath effects including greater incidence of cough, phlegm, and bronchitis. The EPA has come to the same conclusion. The 5 $\mu g/m^3$ value is referred to as the Chronic Reference Exposure Value (REL) for DPM. The SRP supported the

OEHHA's conclusion and noted that the REL may need to be lowered further as more data emerge on potential adverse non-cancer effects of DPM.

To provide a perspective on the contribution that DPM has on the overall statewide average ambient air toxics potential cancer risk, the ARB evaluated risks from specific compounds using data from ARB's ambient monitoring network. ARB maintains a 21-site air toxics monitoring network which measures outdoor ambient concentration levels of approximately 60 air toxics. The ARB has determined that, of the top ten inhalation risk contributors, DPM contributes 71% of the total potential cancer risk (the remaining 29% is split among butadiene, benzene, carbonyls and other pollutants).

The South Coast Air Quality Management District (SCAQMD) has conducted several studies of air toxics in the South Coast Air Basin (SCAB). The most recent study is the Multiple Air Toxics Exposure Study III (MATES-III), which is based on air monitoring performed from 2004 through 2006. The monitoring data presented in the study shows a general downward trend of air toxic levels and approximately an 8% reduction in the population weighted cancer risk from air toxics from the 1998-1998 time period the MATES-II study represents to the 2005 time period represented by the MATES-III study. The MATES-III study estimated that the average basin wide potential cancer risks from DPM was approximately 1,200 average excess cancers per million from all air toxics in the SCAB. Mobile sources are responsible for approximately 94% of the total risk and stationary sources (e.g.; dry cleaners and chrome plating operations) are responsible for the remainder. The MATES-III study estimates that approximately 84% of the cancer risk is due to DPM. This is consistent with the ARB findings. It should be noted that this estimated risk is based on a 70-year exposure to TAC concentrations measured and modeled during the MATES-III study period and do not take into account any future reductions in TAC concentrations

Average ambient concentrations of air toxics are higher in the SCAB than elsewhere in the state, resulting in higher estimates of risk for residents in the SCAB. In general, the highest risks areas have high concentrations of mobile sources. Higher risk levels occur in the south-central Los Angeles area and in the Los Angeles/Long Beach harbor area. Risk levels in these areas are 2 to 3 times greater than in the majority of San Bernardino County. In general, Los Angeles County has the highest risk levels followed by Orange and San Bernardino Counties, while the lowest average risk is estimated in Riverside County. The risk levels near the Ontario Airport is higher than most of San Bernardino County.

2.0 METHODOLOGY

Modeling was performed to estimate the cancer risk due to diesel truck traffic on I-10 adjacent to the project. The methodology presented in OEHHA's "Air Toxics Hot Spots Program Risk Assessment Guidelines-The Air Toxics Hot Spots Program Guidance manual for Preparation of Heath Risk Assessments" (August 2003) was used to determine the potential impacts from DPM on the project site. This methodology uses a Dose-Response assessment to characterize the risk from cancer due to inhaled DPM. Dispersion modeling is used to calculate the annual average concentration of DPM at the Project site. The resulting DPM concentration is combined with other factors to determine the dose of the DPM (i.e. the amount of DPM inhaled). This dose is then multiplied by the Cancer Potency of DPM to determine the cancer risk. To determine the non-cancer risk, the maximum short-term concentration is divided by the Reference Exposure Level (REL) for DPM for to determine the Hazard Index. The cancer risk and non-cancer hazard index are compared to significance thresholds presented in Section 3.1 to determine the significance of the TAC's.

2.1 DISPERSION MODELING PARAMETERS

2.1.1 Dispersion Model

Concentrations of primary pollutants in motor vehicle tailpipes are often two to four (or more) orders of magnitude higher than concentrations measured in the ambient air. As pollutants disperse from the points where they are emitted, the concentrations decrease. Rapid dispersal (i.e., the higher the wind speed), results in decreased concentrations, observed adjacent to the road. Key factors contributing to observed hot spot air quality concentrations include source strengths (e.g., number and types of vehicles per day and their emission rates); distance from the source to a receptor location (e.g., the distance from the road to nearby observer locations); and meteorological conditions (wind speed and direction.) A dispersion model takes this information and calculates pollutant concentrations at receptor locations.

DPM concentrations were calculated using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) pollutant dispersion model. This model was released by the United States Environmental Protection Agency in 2004, and is designed to estimate pollutant concentrations from an industrial source complex. The AERMOD model is a steady-state Gaussian plume model, which can be used to assess pollutant concentrations from a wide variety of sources associated with an industrial source complex. The AERMOD model can be used for multiple sources in urban or rural terrain. The AERMOD model can calculate concentration averages for 1-hour or for the entire meteorological data period (e.g., annual or intermediate time periods such as 24-hour averages). The AERMOD software models pollutant dispersion from many different types of sources for multiple types of pollutants. This analysis used the model to calculate concentrations of DPM. The model requires the input of site and receptor geometry, emission factors, and meteorological data. Data from the Ontario Airport meteorological station is the closest data available for the project area and is most the most representative data available for this area. Three years (1995, 1999 and 2000) of meteorological data collected at the Ontario Airport were obtained from Trinity Consultants. It was determined that the meteorological data from 2000 resulted in the worst case concentrations at the modeled receptors and was used for this analysis.

2.1.2 Emission Factors

The goal of the dispersion modeling effort is to determine the concentrations of DPM. Therefore, only diesel particulate emissions are modeled. Emission factors used in the analysis were generated by the EMFAC2007 (version 2.2) model published by the CARB. This model provides the most current available data for motor vehicle emissions in the State of California. The calculation of cancer risk assumes exposure to DPM for a 70-year period. In the future, emissions of DPM will be reduced through implementation of emissions control measures and fleet turnover (i.e., the replacement of older vehicles with new vehicles). Note that the emission factors from EMFAC2007 only reflect emissions reductions from enacted emissions regulations at the time the model was prepared. The ARB is currently developing several emissions regulations including retrofitting of existing vehicles as a part of its Diesel Risk Reduction Program. The goal of the program is to reduce Diesel Risk by 75% from 2000 levels by 2010 and by 85% in 2020. Except for regulations adopted prior to the publication of EMFAC2007, the goals of the diesel risk reduction program are not reflected in the EMFAC2007 emission factors used for this modeling.

To accurately calculate cancer risk an average emission factor for a 70-year period from the earliest project opening was calculated. For the project, the opening year, or year of earliest occupancy, is 2012. The 70-year average emission factors were calculated using emission factors for the years 2012, 2020, 2030 and 2040 from EMFAC2007. Note that 2040 is the furthest date in the future that EMFAC2007 calculates emission factors. The emission factors from each year listed above were time averaged to estimate the 70-year average emissions data. For this analysis, the 70-year average was calculated using the 2012 emission factor to represent the 2012-2013 period, the 2020 emission factor to represent the 2020-2029 period, the 2030 emission factor to represent the 2030-2039 period, and the 2040 emission factor to represent the 2040-2082 time period.

For non-cancer health risk impacts the Hazard index is calculated based on the peak 24-hour average concentrations. The maximum concentrations will occur during the year with a combination of highest emission factors and highest traffic volumes. The year of highest emission factors occurs during the opening year of the project. Typically, the highest traffic volumes will occur in later years. To model worst-case conditions the peak 24-hour average DPM concentrations are calculated using the emission factor for the opening year of the project, year 2012, and the highest average daily traffic volume projected in the traffic study presented below in Table 3.

Caltrans truck count data shows that in the vicinity of the project, traffic on I-10 is made up of approximately 7.0% heavy trucks and 4.1% medium trucks. Most heavy trucks are diesel fueled but not all of medium trucks are. This data was combined with the vehicle technology mix reported by EMFAC2007 to generate the average diesel vehicle PM_{10} emissions used for the dispersion modeling.

The percentage of diesel-fueled vehicles is important because the total number of vehicles on a road affects how pollutants disperse from the roadway. To accurately include the effects of all the vehicles on the roadway on pollutant dispersion, the total traffic volume needs to be input into the model. Therefore, the average DPM emission factor per diesel-fueled vehicle is multiplied by the percentage of diesel vehicles to obtain the average DPM emission factor for all vehicles on the road.

Table 1 shows the emission factors used in the AERMOD modeling to determine cancer risk and health risk for the project. Two sets of emission factors are presented for the freeway included in the modeling. The values shown represent the number of grams of DPM emitted by one average diesel vehicle as it travels one mile. The first column of Table 1 shows the 70-year average emission factors used in the AERMOD modeling to determine the cancer risk. The second column of Table 1 shows the 2012 emission factors used in the AERMOD modeling to determine the health index.

Table 1
Average Diesel Particulate Matter Emission Factors (grams/mile)

Speed (mph)	70 Year Average	2012
5	0.48517	1.67148
10	0.36117	1.14133
15	0.27302	0.75362
20	0.21522	0.53069
25	0.18075	0.44779
30	0.15531	0.38751
35	0.13766	0.34975
40	0.12693	0.33442
45	0.12194	0.34144
50	0.12846	0.37080
55	0.14706	0.42246
60	0.17076	0.49640
65	0.19952	0.59260

1. Average DPM emissions in grams per mile from diesel fueled vehicles only.

2.1.3 Traffic Volumes and Speeds

The traffic study prepared for the project presented traffic volumes for horizon year 2030. The surrounding roadway network assumptions affect the volumes projected on I-10. The 2030 average daily traffic volumes were used for the modeling and are presented in Table 2.

Table 2
Average Daily Traffic Volumes on I-10 Used For Modeling

Link	Average Daily Traffic Volume
W of Cedar	191,600
Cedar to Riverside	195,000
Riverside to Pepper	219,500
Pepper to Rancho	237,500
Rancho to Mt. Vernon	242,800
E of Mt. Vernon	246,700

Hourly traffic counts from traffic sensors and hourly speeds for I-10 were obtained from the PeMS website (http://pems.eecs.berkeley.edu). The hourly traffic counts were used to develop diurnal profiles for traffic volumes on the freeway, while the hourly speeds were used to determine the emissions factors. To calculate the hourly diurnal, the percentage of ADT for each hour was determined by dividing the hourly volumes by the daily traffic count for the data provided by PeMS. Separate profiles were developed for northbound and southbound I-10. The truck diurnal traffic volume profiles used in the modeling are presented in Table 3. The traffic volume from Table 2 was multiplied by the percentages in Table 3, as appropriate, to determine the hourly traffic volume used in the modeling.

Table 3
Hourly Percentage of ADT (Diurnal Truck Volume Profiles)

	I-10	
Hour	**Southbound**	**Northbound**
0	2.1%	1.3%
1	1.7%	1.1%
2	1.8%	0.9%
3	2.2%	1.3%
4	2.4%	2.1%
5	2.9%	3.4%
6	4.4%	4.6%
7	5.2%	4.8%
8	5.9%	5.8%
9	6.3%	6.1%
10	6.3%	6.4%
11	6.8%	6.3%
12	6.4%	6.0%
13	6.4%	6.3%
14	6.1%	6.0%
15	5.3%	5.7%
16	4.8%	5.2%
17	4.4%	5.4%
18	4.1%	4.6%
19	3.5%	4.1%
20	3.2%	4.0%
21	2.9%	3.7%
22	2.6%	2.9%
23	2.3%	2.1%

Based on the PeMS data, the average speed on I-10 for any hour of the day was greater than 65 mph. However, for heavy truck traffic, the speed limit is 55 mph. Table 1 shows that above 35-45 mph DPM emissions increase with speed. Therefore, for this analysis emission factors at 55 mph for each hour will be utilized since it is the worst case.

2.2 DETERMINATION OF CANCER RISK

It is important to understand that cancer risk represents the probability that a person develops some form of cancer. The estimated risk does not represent mortality rates. It is also important to understand that the risk described in these calculations reflects a level of exposure that would be virtually impossible to experience, and that for most individuals, exposure to a particular contaminant such as DPM, would be considerably less due to shorter duration of residence in the area, amount of time spent at the residence daily and throughout the year, and the split between time spent indoors versus outdoors. Studies have shown that the typical person spends approximately 87 percent of their time indoors, 5 percent of their time outdoors, and 7 percent of their time in vehicles. Indoor DPM levels are typically lower than outdoor levels. One study indicated that indoor concentrations were 67 percent of outdoor concentrations. However, this would be dependant on factors such as open windows and HVAC system filtration efficiencies. The least expensive ventilation system filters have little or no effect on the small diesel particulates. More expensive filters can filter out the larger diesel particulates; however, the ultra fine particulates are primarily unaffected.

The cancer risk from DPM is estimated by first calculating the dose of DPM through inhalation. The dose is then multiplied by the Cancer Potency Factor to determine potential risk of developing cancer over a 70-year lifetime. The dose is calculated through the following equation:

$$\text{Dose}_{inh} = \frac{\text{C}_{\text{air}} \bullet \text{DBR} \bullet \text{A} \bullet \text{EF} \bullet \text{ED} \bullet 10^{-6}}{\text{AT}}$$

where,

Dose_{inh}	Average daily dose per body weight through inhalation (mg/kg/day)
C_{air}	Annual average DPM concentration in air (μg/m^3)
DBR	Daily breathing rate in volume (liters) per body weight (kilograms) per day (L/kg/day)
A	Inhalation absorption factor (unitless)
EF	Exposure Frequency (days/year)
ED	Exposure Duration (years)
AT	Averaging Time Period (days)

The annual average concentration is determined by the AERMOD modeling discussed above. The point estimates for daily breathing rate from the OEHHA Hotspot guidelines are presented in Table 4.

Table 4
Point Estimates for Daily Breathing Rate

Exposure Duration	Rate (L/kg/Day)
9 Years	
Average	452
High End	581
30 & 70 Years	
Average	271
High End	393
Off-Site Worker	
(Single Value)	149

The values for a 9-year duration are higher than the others because they are representative of a child's breathing rate. The data is intended to represent the first 9-years of life. The 30 and 70-year rates are based on average human lifetime breathing rates. The Off-Site Worker rate is based on a 70 kg worker breathing 1.3 m^3/hour for an eight-hour day. 1.3 m^3/hr is the breathing rate recommended by the EPA as an hourly average for outdoor workers.

The Inhalation Absorption Factor (A) is an adjustment factor to be used if the fraction of the substance that is absorbed by the body is different from the fraction used to determine the Cancer Potency Factor. Per OEHHA recommendations it is assumed that for most TAC's, including DPM, there is no difference and the factor is 1.

Exposure Frequency (EF) is the number of days in a year that a receptor is exposed to the substance being analyzed. For a residential receptor one assumes this is 365 days per year. For a worker the exposure is 5 days per week or 245 days per year.

The Exposure Duration (ED) is the amount of time in a person's life that they are exposed to the TAC being analyzed. This is typically 9, 30 or 70 years. Nine years represents the average time a person lives at one residence. Thirty years represents the high end of time a person lives at a residence. Seventy years represents a typical lifetime. Because the methodology used to determine the Cancer Potency Factor is based on long term—near lifetime—exposure, applying this factor to assess shorter duration exposures introduces uncertainty into the analysis. OEHHA does not support the use of cancer potency factors for exposures of less than 9 years.

The Averaging Time Period (AT) is the time over which the cancer risk is assessed. Standard risk assessment methodology calculates the risk over an average, 70-year, lifetime. Therefore, the Averaging Time Period is 25,500 days.

The cancer risk is determined by multiplying the Dose with the Cancer Risk Potency Factor. The Cancer Risk Potency Factor describes the potential risk of developing cancer per unit of average daily dose over a 70-year lifetime. The Cancer inhalation potency factors have been determined by the OEHHA or by the U.S. EPA and endorsed by the OEHHA. The inhalation potency factor determined by OEHHA is 1.1 $(mg/kg\text{-}day)^{-1}$. Multiplying this factor by the dose and by 10^6 (one-million) gives the cancer risk caused by the DPM in terms of number of cancers per million of exposed persons.

2.3 DETERMINATION OF NON-CANCER RISKS

The relationship for the non-cancer health effects of DPM is estimated by the following equation:

$$HI_{DPM} = C_{DPM}/REL_{DPM}$$

where,

HI_{DPM} Hazard Index; an expression of the potential for non-cancer health effects.

C_{DPM} Worst-case short term DPM concentration ($\mu g/m^3$).

REL_{DPM} Reference exposure level (REL) for DPM; the DPM concentration at which no adverse health effects are anticipated.

The chronic REL for DPM was established by OEHHA as 5 μg/m3.

3.0 IMPACT ANALYSIS

3.1 THRESHOLD OF SIGNIFICANCE

Section 6.2 of the SCAQMD CEQA Handbook established a cancer risk significance threshold to evaluate the incremental health impact levels associated with projects that emit toxic air contaminants in the SCAB. This threshold is 10 in one million (i.e., 1.0 x 10^{-5}). Criteria developed in SCAQMD's "Risk Assessments Procedures for Rules 1401 and 212" can be used to evaluate non-cancer impacts. A Hazard Index greater than 1 is considered significant.

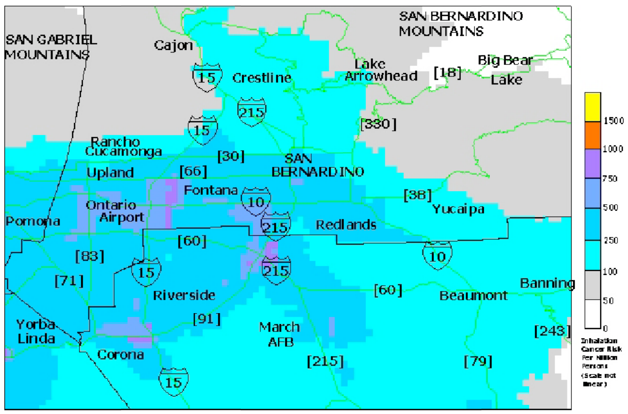
It is important to understand the difference between a threshold criteria and an air standard. A more familiar pollutant is carbon monoxide (CO). Both a threshold criteria and air standards have been established for this pollutant. For CO, the SCAQMD recommends a threshold criteria of 1 ppm. That is, a project that adds more than 1 ppm in an area where CO levels are already high should be identified as having a significant impact on the environment. This is different than the ambient air quality standards (federal standards) that indicate when CO levels exceed 35 ppm for 1 hour that the health of persons exposed may be impaired. For diesel particulate a threshold has been established, but no air quality standard has been adopted.

Since it represents a threshold criteria rather than an air standard, the 10 in one million cancer risk threshold is not appropriate for use in this analysis. This threshold is intended to measure the risk posed by a project emitting toxic air contaminants on nearby existing sensitive uses. The analysis contained in this study, however, is attempting to quantify the opposite situation: the risks to the potential residents of a new project from existing pollutant sources. At this time, there is no current standard or threshold of significance by which to judge such risks.

On April 28, 2005, ARB adopted an "Air Quality and Land Use Handbook," which provides advisory guidelines for siting sensitive uses near facilities that generate toxic air contaminants. However, the ARB did not use a "uniform quantified risk threshold as is typically done in air quality permitting programs" in developing the guidelines presented in the handbook. Instead its recommendations are based on the relative risk from each source type. By not using a uniform quantified risk threshold in its guidance, the ARB has conceded the difficulty in establishing such a standard.

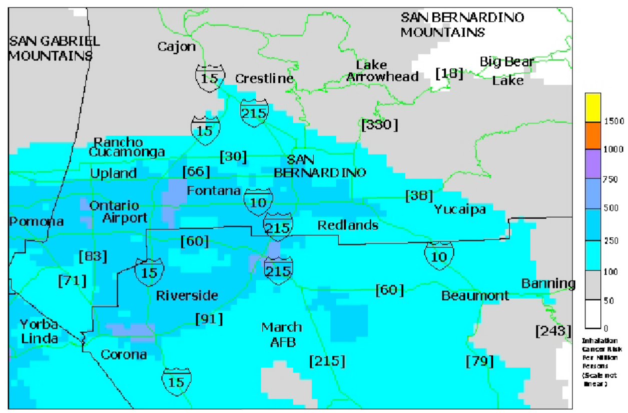
Perhaps the best way of viewing the potential health risk is to put the projected exposure due to the railroad operations and freeway traffic in a regional context. Exhibit 2 shows the cancer risk for the San Bernardino County area. This graphic is from the ARB study website. The first of the series of three shows the current health risk (year 2001) in the San Bernardino County area. It shows that most of San Bernardino County has an exposure risk of between 100 and 500 cancer risks per million as indicated by the light blue and medium blue areas. Other parts of the County, particularly those in more heavily populated areas in Ontario, Fontana and Corona may exceed 750 cancer risks per million. In the vicinity of the project, 2001 cancer risks exceed 750 in a million near Ontario Airport.

Total Risk (diesel + nondiesel)
San Bernardino - Riverside : 2001 Cancer Risk Per Million
All Sources



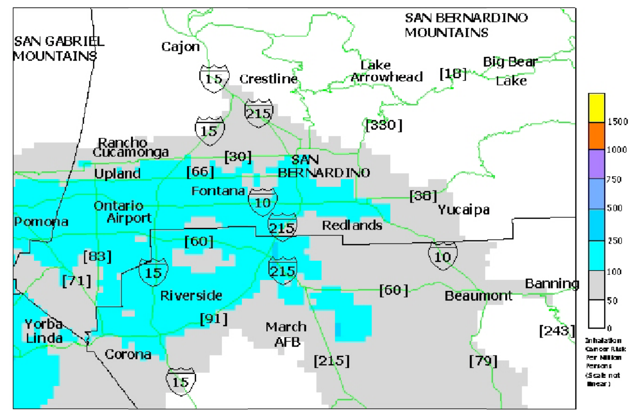
See ARB web site list of sources not yet included in risk.
ARB:EIB:SRF 5/20/2004

Total Risk (diesel + nondiesel)
San Bernardino - Riverside : 2010 Cancer Risk Per Million
AllSources



See ARB web site list of sources not yet included in risk.
ARB:EIB:SRF 5/18/2004

Total Risk (diesel + nondiesel)
San Bernardino - Riverside : 2010 (diesel risk reduced 75% from 2000)
AllSources



See ARB web site list of sources not yet included in risk.
ARB:EIB:SRF 6/18/2004

Source: http://www.arb.ca.gov/toxics/cti/hlthrisk/cncrinhl/rskmapvwtrend.htm

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Exhibit 2
San Bernardino County Inhalation Cancer Risk

The second and third graphics in the series are both for the year 2010. The second graphic shows cancer risk in 2010 with currently enacted regulations that will reduce toxic air contaminant emissions. The graphic on the far right shows a best-case estimate for 2010 conditions with the ARB's Diesel Risk Reduction program. This program is currently being implemented with specific regulations being developed to reduce diesel particulate emissions. Again both of these graphics show that most of the County will be exposed to cancer risks in the 100 to 500 per million range, or even under the best estimate case in the 100 to 250 risks per million range. The exposure due to the major freeways in the area will not be negligible, but risk levels will be consistent with the levels commonly occurring throughout much of Los Angeles County. Note that it appears that the Cancer risk maps presented in Exhibit 2 do not include future reductions in particulate emissions but are representative for the year indicated. That is, the cancer risk presented in 2001 map assumes that persons are exposed to TAC concentrations from 2001 for 70 years with no other changes. The 2010 maps assumes exposure to 2010 TAC concentrations for the two scenarios presented for 70 years with no other changes.

3.2 IMPACT ANALYSIS

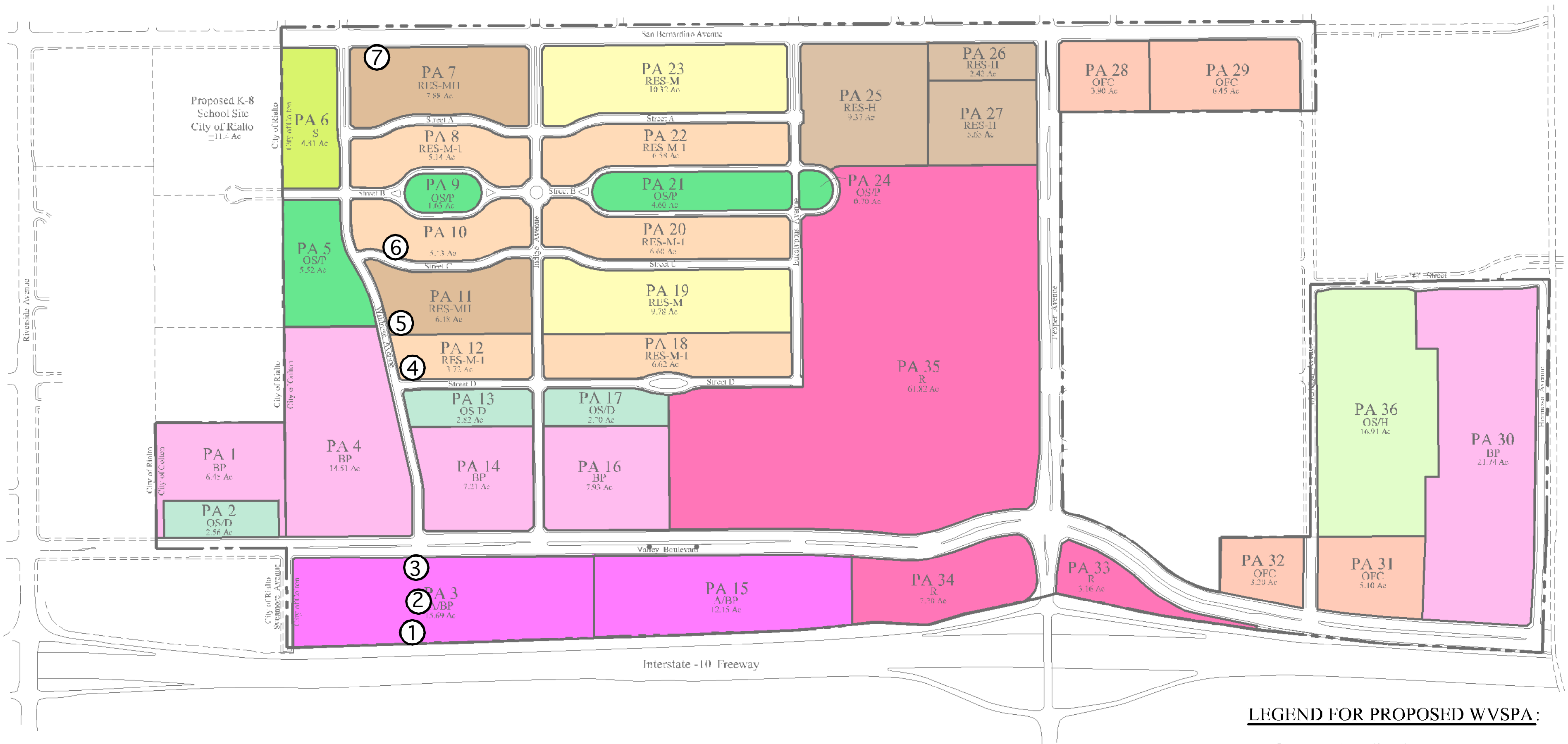
The project site is exposed to TAC emissions from vehicles on the I-10 Freeway and from the Union Pacific Railroad (UPRR) Colton Railyard located south of the freeway. Impacts from I-10 are presented in Section 3.2.1. Dispersion modeling was performed to estimate DPM concentrations on the project site and is used to calculate cancer risk and hazard index at specific receptors. Impacts from the UPRR Colton Railyard are presented in Section 3.2.2. These impacts are based on modeling performed by the California Air Resource Board. Section 3.2.3 discusses the combined impacts from these two sources.

3.2.1 Impacts From I-10

DPM concentrations due to vehicles on I-10 were modeled using the methodology presented in Section 2 at seven receptors shown in Exhibit 3. DPM concentrations from I-10 will primarily vary by distance from the freeway. Therefore, DPM concentrations at other receptors within the project site can be estimated by comparing them with a modeled receptor at about the same distance. Section 3.2.1.1 presents the results of the dispersion modeling and the estimated DPM concentrations at the modeled receptor locations. Section 3.2.1.2 presents the projected cancer risk due to air toxics exposure based on the modeled DPM concentrations. Section 3.2.1.3

3.2.1.1 Modeled I-10 DPM Concentrations

The earliest opening year for the project is 2012. Therefore, 70-year annual average concentrations were modeled for exposure period of 2012 to 2082 using the emission factors presented in Table 1. The 70-year annual average concentrations are used to estimate cancer risk for residents and employees within the project site. Peak 24-hour average concentrations were modeled for an exposure during 2012 using the emission factors presented in Table 1. The peak 24-hour average concentrations are used to estimate the non-cancer health index. DPM emissions are projected to decrease over time therefore, assessing conditions based on the earliest opening year for the project provides a worst-case estimate of the cancer risk and health index. The results of the dispersion modeling are presented in Table 5. The distance from the centerline of I-10 to each modeled receptor location is presented as well.



LEGEND FOR PROPOSED WVSPA:

RES-M	(Medium)
RES-M-1	(Medium 1)
RES-MH	(Medium High)
RES-H	(High)
R	Retail
BP	Business Park
A/BP	Auto / Business Park
OFC	Office
OS/P	Open Space / Park
OS/D	Open Space / Detention
OS/H	Open Space / Habitat
S	School

① Receptor Locations.

Exhibit 3
AERMOD Modeling Receptor Locations

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Table 5
Modeled Diesel Particulate Matter Concentrations From I-10

Receptor	Distance from Centerline of I-10 (Feet)	70-Year Avg. DPM Conc. ($\mu g/m^3$)	Peak 24-Hr. Avg. DPM Conc. ($\mu g/m^3$)
1	103'	0.5408	3.7222
2	477'	0.1908	2.2381
3	827'	0.1189	1.4546
4	1,123'	0.0758	1.0978
5	1,473'	0.0691	1.0340
6	1,936'	0.0532	0.8381
7	3,850'	0.0260	0.3860

3.2.1.2 Calculated Cancer Risks From I-10

Using the concentrations presented in Table 5, the dose calculations presented in Section 2.2, and the DPM Toxic Potency Factor of 1.1 $(mg/kg\text{-}day)^{-1}$, the cancer risk for the seven receptors shown in Exhibit 3 were calculated. Risks were calculated for a lifetime exposure of 70 years with a high end Daily Breathing Rate (DBR) of 393 L/kg/day for residential uses, and a DBR of 149 L/kg/day for commercial uses.

Some additional cancer risk would be experienced due to diesel fueled vehicles on other roadways in the vicinity of the project, and on freeways very distant from the project that were not included in the modeling. However, contributions from these sources are not expected to increase the risk substantially. Cancer risk is also increased due to exposure to other toxic air contaminants from vehicle exhaust as well as other sources. SCAQMD estimates that 84% of the total cancer risk is due to DPM. Of the remaining 16%, approximately 10% is due to other mobile source emissions (including benzene, butadiene, and formaldehyde), and approximately 6% is due to stationary sources. To estimate the total cancer risk from toxic air contaminants (TAC), the DPM cancer risk was divided by 0.84. The estimated total TAC cancer risk is presented in the last column of Table 6.

Table 6
Calculated Cancer Risk From I-10

Receptor	Land Use	Distance from Centerline of I-10 (Feet)	DPM Cancer Risk (per 10^6)	Total TAC Cancer Risk[1] (per 10^6)
1	Commercial	103'	59.6	71.0
2	Commercial	477'	21.0	25.0
3	Commercial	827'	13.1	15.6
4	Residential	1,322'	32.8	39.1
5	Residential	1,473'	29.9	35.6
6	Residential	1,936'	23.0	27.4
7	Residential	3,850'	11.3	13.4

1. Assuming DPM cancer risk is 84% of total risk of toxic air contaminants.

Table 6 illustrates that the highest increased cancer risk due to exposure to toxic air contaminants on the project site is about 71 in one million at the closest commercial land uses, and 39 in one million for residential land uses. All receptors are projected to be exposed to cancer risks in excess of 10 in a million. The maximum cancer risks of 71 and 39 per million, respectively, are much lower than the risks for San Bernardino County and the 1,200 in a million average basin wide risk from the MATES-III study. However, as discussed previously, the cancer risks presented in Exhibit 2 and the MATES-III study are based on hazardous air pollutant concentrations present at the time of their respective analyses. These estimates do not account for future reductions in emissions from newer vehicles complying with stricter emission regulations that are included in the risk estimates presented in Table 6.

3.2.1.3 Calculated Non-Cancer Risks From I-10

Based on the peak 24-hour DPM concentration and the Chronic Inhalation Reference Exposure Level published by the OEHHA of 5 $\mu g/m^3$, the Hazard Index for each receptor due to I-10 DPM emissions was calculated and is presented in Table 7.

Table 7
Calculated Hazard Index for I-10 DPM Emissions

Receptor	Land Use	Hazard Index
1	Commercial	0.7444
2	Commercial	0.4476
3	Commercial	0.2909
4	Residential	0.2196
5	Residential	0.2068
6	Residential	0.1676
7	Residential	0.0772

Table 7 shows that the highest Hazard Index is 0.7444 at Receptor 1. This is lower than the non-cancer risk significance threshold of 1. The non-cancer risk at the project site due to DPM from I-10 is less than the significance threshold. The calculations are provided in the appendix.

3.2.2 Impacts From UP Colton Railyard

The Union Pacific Railroad (UP) Colton railyard is located just south of the project on the opposite side of the I-10 Freeway. The Colton railyard is a classic railyard. Activities at the railyard include; receiving inbound trains, switching cars, picking up and delivering freight cars to/from local businesses, building and departing outbound trains, and repairing and servicing freight cars and locomotives. CARB has identified railyards as a considerable source of TAC with DPM from locomotives being the dominant air toxic component. Because of this, CARB has prepared health risk assessments for most of the rail yards in the state.

3.2.2.1 Cancer Risk From UP Colton Railyard

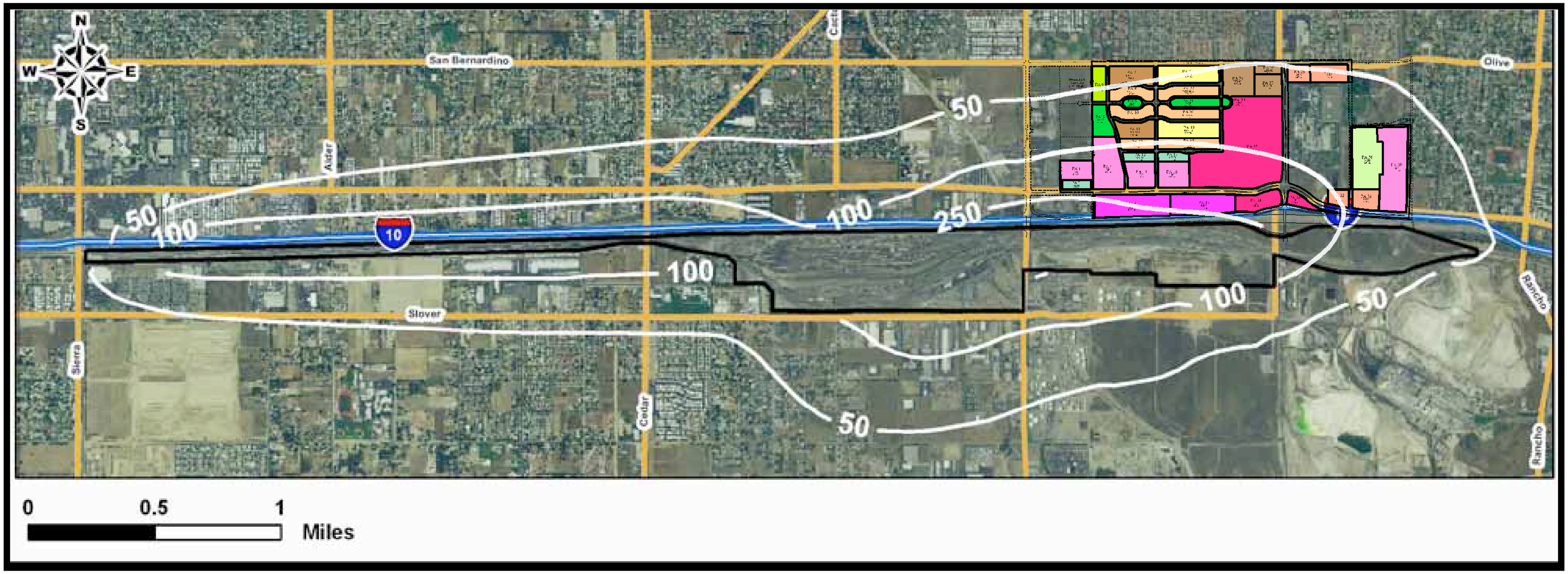
The CARB publication "Health Risk Assessment for the Union Pacific Railroad Colton Railyard" dated April 18, 2008 estimates the cancer risk around the UP Colton Railyard. Exhibit V-1 from the CARB study presents the estimated cancer risk from emissions associated with the railyard operations, and is presented here in Exhibit 4 with the project site overlaid. It should be noted that the cancer risk presented in Exhibit 4 is for residential receptors. Cancer risks for workers in the project are approximately 25% of the residential cancer risk. Also note that the cancer risk is based on existing emissions from the railyard operation at the time the report was prepared and does not take into account any future reductions in locomotive DPM emissions. CARB has several programs to reduce DPM emissions as a part of the DPM risk reduction program that has the goal to reduce DPM emissions by 75% from 2000 levels by 2010 and by 85% by 2020.

Exhibit 4 shows that the highest cancer risk from the UP Colton Railyard is greater than 250 in a million at the southwest corner of the project area. However, this is a commercial use and the cancer risk would be approximately 63 in a million for an employee exposure. The cancer risk at the nearest proposed residential area is just greater than 100 in a million. The lowest cancer risk from the UP Colton Railyard within the project site is just less than 50 in a million at the northwest edge of the project site.

3.2.2.2 Non-Cancer Risk from UP Colton Railyard

Exhibit V-3 from the CARB study presents the estimated Hazard Index from emissions associated with the railyard operations, and is presented here in Exhibit 5 with the project site overlaid. Exhibit 5 shows that the greatest Hazard Index of approximately 0.25 is experienced at the southwest corner of the project site which is proposed to be a commercial use. The greatest hazard index for the residential areas proposed by the project is approximately 0.05. The lowest hazard index for the project site is approximately 0.035.

Figure V-1: Estimated Near-Source Cancer Risks (chances per million people) from the UP Colton Railyard



Source: ARB's"Health Risk Assessment for the Union Pacific Railroad Colton Railyard", April 18, 2008.

Exhibit 4

UP Colton Railyard Cancer Risk Isopleths

Figure V-3: Estimated Non-Cancer Chronic Risk Health Hazard Index from the UP Colton Railyard

N

Exhibit 5
UP Colton Railyard Health Index Isopleths

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3.2.3 Combined Impacts on the Project Site

The risks from DPM exposure are proportional to the DPM concentrations. Total DPM concentrations from two or more sources can be calculated by adding the concentration for each source. Therefore, the total risk from two or more sources can be calculated by adding the risk from each source. In the following sections the total cancer risk and health index from exposure to DPM emissions from traffic on the I-10 Freeway and from the UP Colton Railyard are presented.

3.2.3.1 Combined Cancer Risk

Using the values presented in Table 6 for the risk from I-10 emissions, and estimates taken from the railyard risk isopleths presented in Exhibit 4, the total cancer risk for the seven receptors presented in Exhibit 3 was calculated. Note that for the receptors representing commercial uses, the risks from Exhibit 4 were multiplied by 0.254 to account for the difference in residential and commercial exposure rates. The results of this analysis are presented in Table 8.

Table 8
Combined Cancer Risks

		Cancer Risk (per million) By Source		
Receptor	**Land Use**	**I-10**	**UP Railyard**	**Total**
1	Commercial	71	76	147
2	Commercial	25	70	95
3	Commercial	16	63	79
4	Residential	39	100	139
5	Residential	36	95	131
6	Residential	27	75	102
7	Residential	13	45	58

Table 8 shows that the maximum cancer risk for commercial uses due to exposure to toxic air contaminants from the I-10 freeway and from the UP Colton Railyard is 147 in a million. The maximum risk for residential uses is 139 in a million. Using the maximum residential risk and the population estimate for the project, 4,977 residents, the number of cancer cases caused by exposure to these toxic air contaminants can be estimated by multiplying them together. The results of this analysis using the worst-case residential risk are presented in Table 9.

Table 9
Estimated Resident Cancer Cases due to TAC Exposure

Source	Maximum TAC Cancer Risk (Per 10^6)	Cancer Cases Due to TAC Exposure
I-10	39	0.195
UP Railyard	100	0.498
Combined:	**139**	**0.693**

Table 9 shows that for the entire project, less than seven-tenths of one resident would be expected to contract cancer due to exposure to TAC from I-10 and the UP Colton Railyard. This assumes that the entire population in the project spends time outside at the receptor with the highest DPM exposure, 24-hours per day for a 70-year period. Since, seven tenths of a person cannot get cancer, this result can be interpreted that there is a 69.3% chance that one resident would get cancer in the project due to exposure to TACs.

While cancer risk at the project site due to TAC's may be higher than other areas in San Bernardino County that are located further from the railroad and I-10, the combined risk on the site, will be less than the majority of San Bernardino County and much less than the average in the South Coast Air Basin. For example, the MATES-III study shows that risks in south-central Los Angeles area and the Los Angeles/Long Beach Harbor area are 2 to 3 times greater than the majority of San Bernardino County, and the risks in San Bernardino and Riverside Counties are even less than the risks in Orange County. Even with future emission reductions, this ratio would not be expected to change substantially as these reductions would generally affect all areas equally. The estimated increase in the project population's total number of cancer cases due to TAC exposure is less than one. For these reasons it is concluded that the project site is not significantly impacted by TAC.

3.2.3.2 Combined Non-Cancer Risk

Using the values presented in Table 7 for the risk from I-10 emissions, and estimates taken from the railyard risk isopleths presented in Exhibit 5, the total cancer risk for the seven receptors presented in Exhibit 3 was calculated. The results of this analysis are presented in Table 10.

Table 10
Combined Non-Cancer Risks

		Health Index by Source		
Receptor	**Land Use**	**I-10**	**UP Railyard**	**Total**
1	Commercial	0.744	0.250	0.994
2	Commercial	0.448	0.225	0.673
3	Commercial	0.291	0.200	0.491
4	Residential	0.220	0.050	0.270
5	Residential	0.207	0.045	0.252
6	Residential	0.168	0.040	0.208
7	Residential	0.077	0.035	0.112

Table 10 shows that the highest Health Index projected for the site is 0.994. This is less than the significance threshold of 1. Therefore, the project site will not experience a significant non-cancer health risk impact.

3.3 CONCLUSION

The analysis shows that the TAC cancer risk exposure on the project site is less than the typical exposure in the South Coast Air Basin and the combined non-cancer risk at the project site is less than one. Therefore, significant toxic air contaminant impact is not anticipated for this project.

4.0 REFERENCES

Air Toxics Hot Spots Program Risk Assessment Guidelines-The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessment, Office of Environmental Health Hazard Assessment/California Environmental Protection Agency, August 2003.

Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, California Air Resources Board, October 2000.

Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions, South Coast Air Quality Management District, December 2002.

Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES-II), South Coast Air Quality Management District, March 2000.

Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES-III), South Coast Air Quality Management District, July 2008.

2002 Daily Truck Mix, from Caltrans web site http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/, accessed April 2004.

Risk Assessments Procedures for Rules 1401 and 212, South Coast Air Quality Management District, August 2000.

Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values, California Air Resources Board, November 7, 2002.

Transportation-Related Air Toxics: Case Study Materials Related to US 95 in Nevada (Revised Final White Paper STI-902370-2308-RFWP, Sonoma Technology, Inc., March 2003.

Draft Off-road Modeling Change Technical Memo, Changes to the Locomotive Inventory, by Walter Wong, published on the ARB website, dated July 5, 2006.

OnTrac Trade Impact Study, "National Economic Significance of Rail Capacity and Homeland Security on the Alameda Corridor East", dated September 11, 2003.

"Technical Highlights-Emission Factors for Locomotives", published by EPA, December 1997.

ARB's Fact Sheet "Health Risk Assessment for Railyards", May 2007.

Health Risk Assessment for Union Pacific Railroad Colton Railyard, California Air Resources Board Stationary Source Division, April 18, 2008

APPENDIX

EMISSION FACTOR WORKSHEETS

WVSPA-Colton, SB

line source ave emisfac_appx.xls
10/15/08

Roadway	Link	Traffic Direction	TIME OF DAY	N ADT	CALTRANS All Veh Diesel Ave%	ADT Diesel Only	PEMS data Speed MPH	HT 70 YR Av. EMFAC 55mph(g/mi)	10,000 E HT 70 Av. EMFAC 55mph(g/mi) *10000	W Roadway Width (m)
Year 2030										
I-10	W of Cedar	WB	24 hrs	95,800	6.77%	6482	55	0.14706	1470.6	24.0
	Cedar to Riverside	WB	24 hrs	97,500	6.77%	6598	55	0.14706	1470.6	24.0
	Riverside to Pepper	WB	24 hrs	109,750	6.77%	7426	55	0.14706	1470.6	24.0
	Pepper to Rancho	WB	24 hrs	118,750	6.77%	8035	55	0.14706	1470.6	24.0
	Rancho to Mt. Vernon	WB	24 hrs	121,400	6.77%	8215	55	0.14706	1470.6	24.0
	E of Mt. Vernon	WB	24 hrs	123,350	6.77%	8347	55	0.14706	1470.6	24.0
	W of Cedar	EB	24 hrs	95,800	6.77%	6482	55	0.14706	1470.6	24.0
	Cedar to Riverside	EB	24 hrs	97,500	6.77%	6598	55	0.14706	1470.6	24.0
	Riverside to Pepper	EB	24 hrs	109,750	6.77%	7426	55	0.14706	1470.6	24.0
	Pepper to Rancho	EB	24 hrs	118,750	6.77%	8035	55	0.14706	1470.6	24.0
	Rancho to Mt. Vernon	EB	24 hrs	121,400	6.77%	8215	55	0.14706	1470.6	24.0
	E of Mt. Vernon	EB	24 hrs	123,350	6.77%	8347	55	0.14706	1470.6	24.0

	TRUCK Diurnal Patterns		10/6/08		**W of Cedar** *Hourly Emission Factors*		AERMOD INPUT		9/15/08		**Cedar to Riverside** *Hourly Emission Factors*		AERMOD INPUT	
			2030	**2030**	**SB**	**NB**	**SB**	**NB**	**2030**	**2030**	**SB**	**NB**	**SB**	**NB**
	I-10 E	***I-10 W***	**I-10E**	**I-10W**	**I-10E**	**I-10W**	**I-10E**	**I-10W**	**I-10E**	**I-10W**	**I-10E**	**I-10W**	**I-10E**	**I-10W**
Hour	***Truck Pattern 1*** *% of ADT*	***Truck Pattern 2*** *% of ADT*	**2030 Diesel Veh ADT/Hr**	**2030 Diesel Veh ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)	**Hourly Rates as a % of Peak Emis.**	**Hourly Rates as a % of Peak Emis.**	**2030 Diesel Veh ADT/Hr**	**2030 Diesel Veh ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)	**Hourly Rates as a % of Peak Emis.**	**Hourly Rates as a % of Peak Emis.**
1	*2.1%*	*1.3%*	138	86	0.00146	0.00091	**0.313**	**0.208**	140	87	0.00149	0.00092	**0.313**	**0.209**
2	*1.7%*	*1.1%*	113	69	0.00120	0.00073	**0.257**	**0.168**	115	70	0.00122	0.00075	**0.257**	**0.169**
3	*1.8%*	*0.9%*	114	61	0.00120	0.00064	**0.258**	**0.148**	116	62	0.00122	0.00065	**0.258**	**0.148**
4	*2.2%*	*1.3%*	140	83	0.00148	0.00087	**0.317**	**0.200**	142	84	0.00150	0.00089	**0.317**	**0.202**
5	*2.4%*	*2.1%*	157	135	0.00166	0.00143	**0.356**	**0.328**	160	138	0.00169	0.00146	**0.356**	**0.330**
6	*2.9%*	*3.4%*	190	222	0.00200	0.00235	**0.430**	**0.539**	193	226	0.00204	0.00239	**0.430**	**0.543**
7	*4.4%*	*4.6%*	284	297	0.00300	0.00314	**0.643**	**0.720**	289	302	0.00305	0.00319	**0.643**	**0.725**
8	*5.2%*	*4.8%*	336	314	0.00355	0.00332	**0.763**	**0.762**	342	319	0.00362	0.00338	**0.763**	**0.767**
9	*5.9%*	*5.8%*	382	378	0.00404	0.00399	**0.867**	**0.916**	389	384	0.00411	0.00406	**0.867**	**0.922**
10	*6.3%*	*6.1%*	407	394	0.00431	0.00416	**0.925**	**0.955**	415	401	0.00439	0.00424	**0.925**	**0.961**
11	*6.3%*	*6.4%*	406	412	0.00429	**0.00436**	**0.921**	**1.000**	413	419	0.00437	0.00444	**0.921**	**1.007**
12	*6.8%*	*6.3%*	441	409	**0.00466**	0.00433	**1.000**	**0.993**	448	417	**0.00474**	**0.00441**	**1.000**	**1.000**
13	*6.4%*	*6.0%*	417	387	0.00441	0.00409	**0.946**	**0.938**	424	393	0.00449	0.00416	**0.946**	**0.944**
14	*6.4%*	*6.3%*	413	409	0.00437	0.00432	**0.937**	**0.992**	420	416	0.00444	0.00440	**0.937**	**0.998**
15	*6.1%*	*6.0%*	396	390	0.00419	0.00412	**0.899**	**0.946**	403	397	0.00426	0.00420	**0.899**	**0.953**
16	*5.3%*	*5.7%*	343	368	0.00363	0.00390	**0.779**	**0.894**	349	375	0.00369	0.00397	**0.779**	**0.900**
17	*4.8%*	*5.2%*	314	336	0.00332	0.00356	**0.713**	**0.816**	320	342	0.00338	0.00362	**0.713**	**0.821**
18	*4.4%*	*5.4%*	286	351	0.00303	0.00372	**0.650**	**0.853**	291	358	0.00308	0.00378	**0.650**	**0.858**
19	*4.1%*	*4.6%*	267	299	0.00282	0.00316	**0.606**	**0.725**	272	304	0.00287	0.00322	**0.606**	**0.730**
20	*3.5%*	*4.1%*	226	266	0.00239	0.00282	**0.513**	**0.646**	230	271	0.00243	0.00287	**0.513**	**0.650**
21	*3.2%*	*4.0%*	208	258	0.00220	0.00273	**0.472**	**0.626**	212	263	0.00224	0.00278	**0.472**	**0.630**
22	*2.9%*	*3.7%*	189	237	0.00200	0.00251	**0.429**	**0.575**	193	241	0.00204	0.00255	**0.429**	**0.579**
23	*2.6%*	*2.9%*	168	188	0.00178	0.00199	**0.382**	**0.456**	171	191	0.00181	0.00202	**0.382**	**0.459**
24	*2.3%*	*2.1%*	148	134	0.00156	0.00141	**0.336**	**0.324**	151	136	0.00159	0.00144	**0.336**	**0.326**

		Riverside to Pepper *Hourly Emission Factors*		AERMOD INPUT				**Pepper to Rancho** *Hourly Emission Factors*		AERMOD INPUT				**Rancho to Mt. Vernon** *Hourly Emission Factors*	
2030 I-10E	**2030 I-10W**	SB I-10E	NB I-10W	**SB I-10E**	**NB I-10W**	**2030 I-10E**	**2030 I-10W**	SB I-10E	NB I-10W	**SB I-10E**	**NB I-10W**	**2030 I-10E**	**2030 I-10W**	SB I-10E	NB I-10W
2030 Diesel Veh ADT/Hr	**2030 Diesel Veh ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)	**Hourly Rates as a % of Peak Emis.**	**Hourly Rates as a % of Peak Emis.**	**2030 Diesel Veh ADT/Hr**	**2030 Diesel Veh ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)	**Hourly Rates as a % of Peak Emis.**	**Hourly Rates as a % of Peak Emis.**	**2030 Diesel Veh ADT/Hr**	**2030 Diesel Veh ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)
158	98	0.00167	0.00104	**0.313**	**0.209**	171	106	0.00181	0.00112	**0.313**	**0.208**	175	109	0.00185	0.00115
130	79	0.00137	0.00084	**0.257**	**0.169**	140	86	0.00148	0.00091	**0.257**	**0.168**	143	88	0.00152	0.00093
130	70	0.00138	0.00074	**0.258**	**0.148**	141	75	0.00149	0.00080	**0.258**	**0.148**	144	77	0.00152	0.00081
160	95	0.00169	0.00100	**0.317**	**0.202**	173	102	0.00183	0.00108	**0.317**	**0.200**	177	105	0.00187	0.00111
180	155	0.00190	0.00164	**0.356**	**0.330**	194	168	0.00206	0.00177	**0.356**	**0.328**	199	171	0.00210	0.00181
217	255	0.00230	0.00269	**0.430**	**0.543**	235	276	0.00248	0.00291	**0.430**	**0.539**	240	282	0.00254	0.00298
325	340	0.00344	0.00360	**0.643**	**0.725**	351	368	0.00372	0.00389	**0.643**	**0.720**	359	376	0.00380	0.00398
385	360	0.00407	0.00380	**0.763**	**0.767**	417	389	0.00441	0.00412	**0.763**	**0.762**	426	398	0.00450	0.00421
438	433	0.00463	0.00457	**0.867**	**0.922**	473	468	0.00501	0.00495	**0.867**	**0.916**	484	478	0.00512	0.00506
467	451	0.00494	0.00477	**0.925**	**0.961**	505	488	0.00534	0.00516	**0.925**	**0.955**	516	499	0.00546	0.00528
465	472	0.00492	0.00499	**0.921**	**1.007**	503	511	0.00532	**0.00540**	**0.921**	**1.000**	514	522	0.00544	**0.00552**
505	469	**0.00534**	**0.00496**	**1.000**	**1.000**	546	507	**0.00578**	0.00537	**1.000**	**0.993**	558	519	**0.00591**	0.00549
478	443	0.00505	0.00468	**0.946**	**0.944**	517	479	0.00547	0.00507	**0.946**	**0.938**	528	490	0.00559	0.00518
473	468	0.00500	0.00495	**0.937**	**0.998**	512	507	0.00541	0.00536	**0.937**	**0.992**	523	518	0.00553	0.00548
454	447	0.00480	0.00473	**0.899**	**0.953**	491	483	0.00519	0.00511	**0.899**	**0.946**	502	494	0.00531	0.00523
393	422	0.00416	0.00446	**0.779**	**0.900**	425	457	0.00450	0.00483	**0.779**	**0.894**	435	467	0.00460	0.00494
360	385	0.00381	0.00407	**0.713**	**0.821**	389	417	0.00412	0.00441	**0.713**	**0.816**	398	426	0.00421	0.00451
328	403	0.00347	0.00426	**0.650**	**0.858**	355	436	0.00375	0.00461	**0.650**	**0.853**	363	445	0.00384	0.00471
306	342	0.00324	0.00362	**0.606**	**0.730**	331	370	0.00350	0.00392	**0.606**	**0.725**	338	379	0.00358	0.00401
259	305	0.00274	0.00323	**0.513**	**0.650**	280	330	0.00296	0.00349	**0.513**	**0.646**	286	337	0.00303	0.00357
238	296	0.00252	0.00313	**0.472**	**0.630**	258	320	0.00273	0.00338	**0.472**	**0.626**	264	327	0.00279	0.00346
217	272	0.00229	0.00287	**0.429**	**0.579**	235	294	0.00248	0.00311	**0.429**	**0.575**	240	300	0.00254	0.00318
193	215	0.00204	0.00228	**0.382**	**0.459**	209	233	0.00221	0.00246	**0.382**	**0.456**	213	238	0.00226	0.00252
169	153	0.00179	0.00162	**0.336**	**0.326**	183	166	0.00194	0.00175	**0.336**	**0.324**	187	169	0.00198	0.00179

AERMOD INPUT				E of Mt. Vernon *Hourly Emission Factors*		AERMOD INPUT	
SB	**NB**	**2030**	**2030**	SB	NB	**SB**	**NB**
I-10E	**I-10W**	**I-10E**	**I-10W**	I-10E	I-10W	**I-10E**	**I-10W**
Hourly Rates as a % of Peak Emis.	**Hourly Rates as a % of Peak Emis.**	**2030 Diesel Veh ADT/Hr**	**2030 Diesel Veh ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)	**Hourly Rates as a % of Peak Emis.**	**Hourly Rates as a % of Peak Emis.**
0.313	**0.208**	178	110	0.00188	0.00117	**0.313**	**0.208**
0.257	**0.168**	146	89	0.00154	0.00094	**0.257**	**0.168**
0.258	**0.148**	146	78	0.00155	0.00083	**0.258**	**0.148**
0.317	**0.200**	180	106	0.00190	0.00112	**0.317**	**0.200**
0.356	**0.328**	202	174	0.00213	0.00184	**0.356**	**0.328**
0.430	**0.539**	244	286	0.00258	0.00303	**0.430**	**0.539**
0.643	**0.720**	365	382	0.00386	0.00404	**0.643**	**0.720**
0.763	**0.762**	433	404	0.00458	0.00427	**0.763**	**0.762**
0.867	**0.916**	492	486	0.00520	0.00514	**0.867**	**0.916**
0.925	**0.955**	525	507	0.00555	0.00536	**0.925**	**0.955**
0.921	**1.000**	523	531	0.00553	**0.00561**	**0.921**	**1.000**
1.000	**0.993**	567	527	**0.00600**	0.00558	**1.000**	**0.993**
0.946	**0.938**	537	498	0.00568	0.00526	**0.946**	**0.938**
0.937	**0.992**	532	526	0.00562	0.00557	**0.937**	**0.992**
0.899	**0.946**	510	502	0.00539	0.00531	**0.899**	**0.946**
0.779	**0.894**	442	474	0.00467	0.00502	**0.779**	**0.894**
0.713	**0.816**	404	433	0.00428	0.00458	**0.713**	**0.816**
0.650	**0.853**	369	453	0.00390	0.00479	**0.650**	**0.853**
0.606	**0.725**	344	385	0.00364	0.00407	**0.606**	**0.725**
0.513	**0.646**	291	343	0.00308	0.00363	**0.513**	**0.646**
0.472	**0.626**	268	332	0.00283	0.00351	**0.472**	**0.626**
0.429	**0.575**	244	305	0.00258	0.00323	**0.429**	**0.575**
0.382	**0.456**	217	242	0.00229	0.00256	**0.382**	**0.456**
0.336	**0.324**	190	172	0.00201	0.00182	**0.336**	**0.324**

WVSPA-Colton, SB

Roadway	Link	Traffic Direction	TIME OF DAY	N ADT	CALTRANS All Veh Diesel Ave%	ADT Diesel Only	PEMS data Speed MPH	HT **2012 Av. EMFAC** 55mph(g/mi)	10,000 E **2012 Av. EMFAC** 55mph(g/mi) ***10000**	W Roadway Width (m)
Year 2030										
I-10	W of Cedar	WB	24 hrs	95,800	7.25%	6945	55	0.42246	4224.6	24.0
	Cedar to Riverside	WB	24 hrs	97,500	7.25%	7068	55	0.42246	4224.6	24.0
	Riverside to Pepper	WB	24 hrs	109,750	7.25%	7956	55	0.42246	4224.6	24.0
	Pepper to Rancho	WB	24 hrs	118,750	7.25%	8609	55	0.42246	4224.6	24.0
	Rancho to Mt. Vernon	WB	24 hrs	121,400	7.25%	8801	55	0.42246	4224.6	24.0
	E of Mt. Vernon	WB	24 hrs	123,350	7.25%	8942	55	0.42246	4224.6	24.0
	W of Cedar	EB	24 hrs	95,800	7.25%	6945	55	0.42246	4224.6	24.0
	Cedar to Riverside	EB	24 hrs	97,500	7.25%	7068	55	0.42246	4224.6	24.0
	Riverside to Pepper	EB	24 hrs	109,750	7.25%	7956	55	0.42246	4224.6	24.0
	Pepper to Rancho	EB	24 hrs	118,750	7.25%	8609	55	0.42246	4224.6	24.0
	Rancho to Mt. Vernon	EB	24 hrs	121,400	7.25%	8801	55	0.42246	4224.6	24.0
	E of Mt. Vernon	EB	24 hrs	123,350	7.25%	8942	55	0.42246	4224.6	24.0

	TRUCK Diurnal Patterns		10/6/08		***Hourly Emission Factors***		AERMOD INPUT				***Hourly Emission Factors***		AERMOD INPUT	
			2030	**2030**	**SB**	**NB**	**SB**	**NB**	**2030**	**2030**	**SB**	**NB**	**SB**	**NB**
	I-10 E	***I-10 W***	**I-10E**	**I-10W**	**I-10E**	**I-10W**	**I-10E**	**I-10W**	**I-10E**	**I-10W**	**I-10E**	**I-10W**	**I-10E**	**I-10W**
Hour	***Truck Pattern 1*** ***% of ADT***	***Truck Pattern 2*** ***% of ADT***	**2030 ADT/Hr**	**2030 ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)	**Hourly Rates as a % of Peak Emis.**	**Hourly Rates as a % of Peak Emis.**	**2030 ADT/Hr**	**2030 ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)	**Hourly Rates as a % of Peak Emis.**	**Hourly Rates as a % of Peak Emis.**
1	*2.1%*	*1.3%*	148	92	0.00449	0.00279	**0.313**	**0.208**	150	94	0.00457	0.00284	**0.313**	**0.209**
2	*1.7%*	*1.1%*	121	74	0.00369	0.00225	**0.257**	**0.168**	123	76	0.00375	0.00229	**0.257**	**0.169**
3	*1.8%*	*0.9%*	122	65	0.00370	0.00198	**0.258**	**0.148**	124	66	0.00377	0.00201	**0.258**	**0.148**
4	*2.2%*	*1.3%*	150	88	0.00455	0.00269	**0.317**	**0.200**	152	90	0.00463	0.00273	**0.317**	**0.202**
5	*2.4%*	*2.1%*	168	145	0.00510	0.00440	**0.356**	**0.328**	171	147	0.00519	0.00448	**0.356**	**0.330**
6	*2.9%*	*3.4%*	203	238	0.00617	0.00724	**0.430**	**0.539**	207	242	0.00628	0.00736	**0.430**	**0.543**
7	*4.4%*	*4.6%*	304	318	0.00923	0.00966	**0.643**	**0.720**	309	324	0.00939	0.00983	**0.643**	**0.725**
8	*5.2%*	*4.8%*	360	336	0.01094	0.01022	**0.763**	**0.762**	366	342	0.01113	0.01040	**0.763**	**0.767**
9	*5.9%*	*5.8%*	409	404	0.01243	0.01229	**0.867**	**0.916**	416	412	0.01265	0.01251	**0.867**	**0.922**
10	*6.3%*	*6.1%*	437	422	0.01326	0.01281	**0.925**	**0.955**	444	429	0.01350	0.01304	**0.925**	**0.961**
11	*6.3%*	*6.4%*	435	442	0.01321	**0.01341**	**0.921**	**1.000**	443	449	0.01344	0.01365	**0.921**	**1.007**
12	*6.8%*	*6.3%*	472	439	**0.01434**	0.01333	**1.000**	**0.993**	480	446	**0.01460**	**0.01356**	**1.000**	**1.000**
13	*6.4%*	*6.0%*	447	414	0.01357	0.01258	**0.946**	**0.938**	455	421	0.01381	0.01281	**0.946**	**0.944**
14	*6.4%*	*6.3%*	442	438	0.01344	0.01331	**0.937**	**0.992**	450	446	0.01368	0.01354	**0.937**	**0.998**
15	*6.1%*	*6.0%*	424	418	0.01289	0.01270	**0.899**	**0.946**	432	425	0.01312	0.01292	**0.899**	**0.953**
16	*5.3%*	*5.7%*	368	395	0.01117	0.01199	**0.779**	**0.894**	374	402	0.01137	0.01220	**0.779**	**0.900**
17	*4.8%*	*5.2%*	336	360	0.01022	0.01094	**0.713**	**0.816**	342	367	0.01040	0.01114	**0.713**	**0.821**
18	*4.4%*	*5.4%*	307	377	0.00932	0.01144	**0.650**	**0.853**	312	383	0.00948	0.01164	**0.650**	**0.858**
19	*4.1%*	*4.6%*	286	320	0.00869	0.00973	**0.606**	**0.725**	291	326	0.00885	0.00990	**0.606**	**0.730**
20	*3.5%*	*4.1%*	242	285	0.00735	0.00867	**0.513**	**0.646**	246	290	0.00748	0.00882	**0.513**	**0.650**
21	*3.2%*	*4.0%*	223	276	0.00677	0.00840	**0.472**	**0.626**	227	281	0.00689	0.00855	**0.472**	**0.630**
22	*2.9%*	*3.7%*	203	254	0.00616	0.00772	**0.429**	**0.575**	206	259	0.00627	0.00786	**0.429**	**0.579**
23	*2.6%*	*2.9%*	180	201	0.00548	0.00612	**0.382**	**0.456**	184	205	0.00558	0.00623	**0.382**	**0.459**
24	*2.3%*	*2.1%*	159	143	0.00482	0.00435	**0.336**	**0.324**	161	146	0.00490	0.00443	**0.336**	**0.326**

		Hourly Emission Factors		AERMOD INPUT				*Hourly Emission Factors*		AERMOD INPUT				*Hourly Emission Factors*	
2030 I-10E	**2030 I-10W**	SB I-10E	NB I-10W	**SB I-10E**	**NB I-10W**	**2030 I-10E**	**2030 I-10W**	SB I-10E	NB I-10W	**SB I-10E**	**NB I-10W**	**2030 I-10E**	**2030 I-10W**	SB I-10E	NB I-10W
2030 ADT/Hr	**2030 ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)	**Hourly Rates as a % of Peak Emis.**	**Hourly Rates as a % of Peak Emis.**	**2030 ADT/Hr**	**2030 ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)	**Hourly Rates as a % of Peak Emis.**	**Hourly Rates as a % of Peak Emis.**	**2030 ADT/Hr**	**2030 ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)
169	105	0.00515	0.00320	**0.313**	**0.209**	183	114	0.00557	0.00346	**0.313**	**0.208**	187	116	0.00569	0.00354
139	85	0.00422	0.00258	**0.257**	**0.169**	150	92	0.00457	0.00279	**0.257**	**0.168**	154	94	0.00467	0.00286
140	75	0.00424	0.00227	**0.258**	**0.148**	151	81	0.00459	0.00245	**0.258**	**0.148**	154	83	0.00469	0.00251
172	101	0.00521	0.00308	**0.317**	**0.202**	186	110	0.00564	0.00333	**0.317**	**0.200**	190	112	0.00577	0.00340
192	166	0.00585	0.00504	**0.356**	**0.330**	208	180	0.00632	0.00546	**0.356**	**0.328**	213	184	0.00647	0.00558
233	273	0.00707	0.00829	**0.430**	**0.543**	252	295	0.00765	0.00897	**0.430**	**0.539**	257	302	0.00782	0.00917
348	364	0.01057	0.01107	**0.643**	**0.725**	377	394	0.01144	0.01198	**0.643**	**0.720**	385	403	0.01170	0.01224
413	385	0.01253	0.01171	**0.763**	**0.767**	446	417	0.01356	0.01267	**0.763**	**0.762**	456	426	0.01386	0.01295
469	463	0.01424	0.01408	**0.867**	**0.922**	507	501	0.01541	0.01523	**0.867**	**0.916**	519	513	0.01576	0.01557
500	483	0.01520	0.01468	**0.925**	**0.961**	541	523	0.01644	0.01588	**0.925**	**0.955**	553	534	0.01681	0.01624
498	506	0.01513	0.01537	**0.921**	**1.007**	539	547	0.01638	**0.01663**	**0.921**	**1.000**	551	560	0.01674	**0.01700**
541	503	**0.01643**	**0.01527**	**1.000**	**1.000**	585	544	**0.01778**	0.01652	**1.000**	**0.993**	598	556	**0.01818**	0.01689
512	474	0.01555	0.01441	**0.946**	**0.944**	554	513	0.01683	0.01560	**0.946**	**0.938**	566	525	0.01720	0.01594
507	502	0.01539	0.01524	**0.937**	**0.998**	548	543	0.01666	0.01649	**0.937**	**0.992**	560	555	0.01703	0.01686
486	479	0.01477	0.01454	**0.899**	**0.953**	526	518	0.01598	0.01574	**0.899**	**0.946**	538	530	0.01633	0.01609
421	452	0.01280	0.01374	**0.779**	**0.900**	456	489	0.01384	0.01486	**0.779**	**0.894**	466	500	0.01415	0.01520
385	413	0.01171	0.01253	**0.713**	**0.821**	417	446	0.01267	0.01356	**0.713**	**0.816**	426	456	0.01295	0.01387
351	431	0.01068	0.01311	**0.650**	**0.858**	380	467	0.01155	0.01418	**0.650**	**0.853**	389	477	0.01181	0.01450
328	367	0.00996	0.01115	**0.606**	**0.730**	355	397	0.01078	0.01206	**0.606**	**0.725**	363	406	0.01102	0.01233
277	327	0.00842	0.00993	**0.513**	**0.650**	300	354	0.00912	0.01074	**0.513**	**0.646**	307	361	0.00932	0.01098
255	317	0.00776	0.00962	**0.472**	**0.630**	276	343	0.00839	0.01041	**0.472**	**0.626**	282	350	0.00858	0.01064
232	291	0.00706	0.00884	**0.429**	**0.579**	251	315	0.00763	0.00957	**0.429**	**0.575**	257	322	0.00781	0.00978
207	231	0.00628	0.00701	**0.382**	**0.459**	224	250	0.00680	0.00758	**0.382**	**0.456**	229	255	0.00695	0.00775
182	164	0.00552	0.00498	**0.336**	**0.326**	196	178	0.00597	0.00539	**0.336**	**0.324**	201	181	0.00610	0.00551

AERMOD INPUT				*Hourly Emission Factors*		AERMOD INPUT	
SB	**NB**	**2030**	**2030**	SB	NB	**SB**	**NB**
I-10E	**I-10W**	**I-10E**	**I-10W**	I-10E	I-10W	**I-10E**	**I-10W**
Hourly Rates as a % of Peak Emis.	**Hourly Rates as a % of Peak Emis.**	**2030 ADT/Hr**	**2030 ADT/Hr**	70 YR PM10 EMFAC (g/s/m^2)	70 YR PM10 EMFAC (g/s/m^2)	**Hourly Rates as a % of Peak Emis.**	**Hourly Rates as a % of Peak Emis.**
0.313	**0.208**	190	118	0.00578	0.00359	**0.313**	**0.208**
0.257	**0.168**	156	96	0.00475	0.00290	**0.257**	**0.168**
0.258	**0.148**	157	84	0.00477	0.00255	**0.258**	**0.148**
0.317	**0.200**	193	114	0.00586	0.00346	**0.317**	**0.200**
0.356	**0.328**	216	187	0.00657	0.00567	**0.356**	**0.328**
0.430	**0.539**	261	307	0.00794	0.00932	**0.430**	**0.539**
0.643	**0.720**	391	409	0.01188	0.01244	**0.643**	**0.720**
0.763	**0.762**	464	433	0.01409	0.01316	**0.763**	**0.762**
0.867	**0.916**	527	521	0.01601	0.01582	**0.867**	**0.916**
0.925	**0.955**	562	543	0.01708	0.01650	**0.925**	**0.955**
0.921	**1.000**	560	568	0.01701	**0.01727**	**0.921**	**1.000**
1.000	**0.993**	608	565	**0.01847**	0.01716	**1.000**	**0.993**
0.946	**0.938**	575	533	0.01748	0.01620	**0.946**	**0.938**
0.937	**0.992**	569	564	0.01730	0.01713	**0.937**	**0.992**
0.899	**0.946**	546	538	0.01660	0.01635	**0.899**	**0.946**
0.779	**0.894**	473	508	0.01438	0.01544	**0.779**	**0.894**
0.713	**0.816**	433	464	0.01316	0.01409	**0.713**	**0.816**
0.650	**0.853**	395	485	0.01200	0.01473	**0.650**	**0.853**
0.606	**0.725**	368	412	0.01119	0.01253	**0.606**	**0.725**
0.513	**0.646**	312	367	0.00947	0.01116	**0.513**	**0.646**
0.472	**0.626**	287	356	0.00872	0.01081	**0.472**	**0.626**
0.429	**0.575**	261	327	0.00793	0.00994	**0.429**	**0.575**
0.382	**0.456**	232	259	0.00706	0.00788	**0.382**	**0.456**
0.336	**0.324**	204	184	0.00620	0.00560	**0.336**	**0.324**

AERMOD Dispersion Modeling Output File

```
1                      AERMOD PRIME - (DATED 07026)

                     AERMODPRx    VERSION  4.6.0
            (C) COPYRIGHT 1998-2007, Trinity Consultants

 Run Began on 10/08/2008 at 10:05:10

 ** BREEZE AERMOD Pro v5.2.1 - C:\Documents and Settings\Environmental Svcs\Desktop\WVSP\WVSP_100808.dat
 ** Trinity Consultants

 ** PRIME

 CO STARTING
 CO TITLEONE  WVSPA
 CO MODELOPT  CONC  FLAT
 CO AVERTIME  24  ANNUAL
 CO POLLUTID  PM10
 CO FLAGPOLE  1.5
 CO RUNORNOT  RUN
 CO FINISHED

 SO STARTING
 SO ELEVUNIT  METERS
 SO LOCATION  SRC1  AREALINE  465873.9  3769671.7  0
 ** SRCDESCR  NB I-10 Riverside to Pepper
 SO LOCATION  SRC2  AREALINE  466301.6  3769667.0  0
 ** SRCDESCR  NB I-10 Riverside to Pepper
 SO LOCATION  SRC3  AREALINE  467169.3  3769689.9  0
 ** SRCDESCR  NB I-10 Riverside to Pepper
 SO LOCATION  SRC4  AREALINE  467975.4  3769669.0  0
 ** SRCDESCR  NB-10 Pepper to Rancho
 SO LOCATION  SRC5  AREALINE  468850.6  3769592.7  0
 ** SRCDESCR  NB-10 Pepper to Rancho
 SO LOCATION  SRC6  AREALINE  469257.1  3769470.0  0
 ** SRCDESCR  NB I-10 E of Rancho
 SO LOCATION  SRC7  AREALINE  469562.1  3769371.6  0
 ** SRCDESCR  NB I-10 E of Rancho
 SO LOCATION  SRC8  AREALINE  465872.4  3769659.9  0
 ** SRCDESCR  SB I-10 Riverside to Pepper
 SO LOCATION  SRC9  AREALINE  466293.1  3769639.7  0
 ** SRCDESCR  SB I-10 Riverside to Pepper
 SO LOCATION  SRC10  AREALINE  467162.5  3769659.7  0
 ** SRCDESCR  SB I-10 Riverside to Pepper
 SO LOCATION  SRC12  AREALINE  468839.1  3769566.2  0
 ** SRCDESCR  SB I-10 Pepper to Rancho
 SO LOCATION  SRC13  AREALINE  469056.7  3769514.7  0
 ** SRCDESCR  SB I-10 Pepper to Rancho
 SO LOCATION  SRC14  AREALINE  469332.3  3769394.8  0
 ** SRCDESCR  SB I-10 E of Rancho
 SO LOCATION  SRC15  AREALINE  469535.5  3769338.3  0
 ** SRCDESCR  SB I-10 E of Rancho
 SO LOCATION  SRC16  AREALINE  467961.5  3769638.4  0
 ** SRCDESCR  SB I-10 Pepper to Rancho
 SO LOCATION  SRC17  AREALINE  465874.6  3769681.5  0
 ** SRCDESCR  NB I-10 Cedar to Riverside
 SO LOCATION  SRC18  AREALINE  465713.9  3769670.2  0
 ** SRCDESCR  NB I-10 Cedar to Riverside
 SO LOCATION  SRC19  AREALINE  465493.9  3769634.4  0
 ** SRCDESCR  NB I-10 Cedar to Riverside
 SO LOCATION  SRC20  AREALINE  463997.6  3769608.8  0
 ** SRCDESCR  NB I-10 Cedar to Riverside
 SO LOCATION  SRC21  AREALINE  463598.5  3769622.1  0
 ** SRCDESCR  NB I-10 W of Cedar
 SO LOCATION  SRC22  AREALINE  463064.2  3769558.6  0
 ** SRCDESCR  NB I-10 W of Cedar
 SO LOCATION  SRC23  AREALINE  465871.8  3769660.5  0
 ** SRCDESCR  SB I-10 Cedar to Riverside
 SO LOCATION  SRC24  AREALINE  465655.9  3769634.9  0
 ** SRCDESCR  SB I-10 Cedar to Riverside
 SO LOCATION  SRC25  AREALINE  465479.8  3769594.0  0
 ** SRCDESCR  SB I-10 Cedar to Riverside
 SO LOCATION  SRC26  AREALINE  463998.9  3769568.4  0
 ** SRCDESCR  SB I-10 Cedar to Riverside
 SO LOCATION  SRC27  AREALINE  463598.7  3769587.8  0
 ** SRCDESCR  SB I-10 W of Cedar
 SO LOCATION  SRC28  AREALINE  463100.3  3769530.5  0
 ** SRCDESCR  SB I-10 W of Cedar
 SO SRCPARAM  SRC1  4.960000E-03  3.5  427.6  10  0.8  0
 SO SRCPARAM  SRC2  4.960000E-03  3.5  868.2  10  -1.5  0
 SO SRCPARAM  SRC3  4.960000E-03  3.5  807.4  10  1.5  0
 SO SRCPARAM  SRC4  5.400000E-03  3.5  879.3  10  4.8  0
 SO SRCPARAM  SRC5  5.400000E-03  3.5  425  10  16.9  0
 SO SRCPARAM  SRC6  5.520000E-03  3.5  317.6  10  18.1  0
```

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SO SRCPARAM  SRC7  5.520000E-03  3.5  428.8  10  12.1  0
SO SRCPARAM  SRC8  5.340000E-03  3.5  425.6  10  2.7  0
SO SRCPARAM  SRC9  5.340000E-03  3.5  868.4  10  -1  0
SO SRCPARAM  SRC10  5.340000E-03  3.5  799.2  10  1.6  0
SO SRCPARAM  SRC12  5.780000E-03  3.5  223.7  10  15.3  0
SO SRCPARAM  SRC13  5.780000E-03  3.5  297  10  24.6  0
SO SRCPARAM  SRC14  5.910000E-03  3.5  207.6  10  16.8  0
SO SRCPARAM  SRC15  5.910000E-03  3.5  436.3  10  10.6  0
SO SRCPARAM  SRC16  5.780000E-03  3.5  879.6  10  5.3  0
SO SRCPARAM  SRC17  4.410000E-03  3.5  160.8  10  177.8  0
SO SRCPARAM  SRC18  4.410000E-03  3.5  223.1  10  172.1  0
SO SRCPARAM  SRC19  4.410000E-03  3.5  1494.5  10  179.1  0
SO SRCPARAM  SRC20  4.410000E-03  3.5  400.3  10  -178.8  0
SO SRCPARAM  SRC21  4.360000E-03  3.5  537.5  10  173.8  0
SO SRCPARAM  SRC22  4.360000E-03  3.5  1465.3  10  178.2  0
SO SRCPARAM  SRC23  4.740000E-03  3.5  216.7  10  175.1  0
SO SRCPARAM  SRC24  4.740000E-03  3.5  180.7  10  168.6  0
SO SRCPARAM  SRC25  4.740000E-03  3.5  1482.2  10  178.8  0
SO SRCPARAM  SRC26  4.740000E-03  3.5  401.7  10  -177.2  0
SO SRCPARAM  SRC27  4.660000E-03  3.5  501.2  10  173.9  0
SO SRCPARAM  SRC28  4.660000E-03  3.5  1502.1  10  178.3  0
SO EMISFACT  SRC1  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC1  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC1  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC2  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC2  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC2  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC3  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC3  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC3  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC4  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
SO EMISFACT  SRC4  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC4  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC4  HROFDY  0.324
SO EMISFACT  SRC5  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
SO EMISFACT  SRC5  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC5  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC5  HROFDY  0.324
SO EMISFACT  SRC6  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
SO EMISFACT  SRC6  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC6  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC6  HROFDY  0.324
SO EMISFACT  SRC7  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
SO EMISFACT  SRC7  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC7  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC7  HROFDY  0.324
SO EMISFACT  SRC8  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC8  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC8  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC9  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC9  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC9  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC10  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC10  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC10  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC12  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC12  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC12  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC13  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC13  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC13  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC14  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC14  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC14  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC15  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC15  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC15  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC16  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC16  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC16  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC17  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC17  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC17  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC18  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC18  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC18  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC19  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC19  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC19  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC20  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC20  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC20  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC21  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
```

```
SO EMISFACT  SRC21  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC21  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC21  HROFDY  0.324
SO EMISFACT  SRC22  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
SO EMISFACT  SRC22  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC22  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC22  HROFDY  0.324
SO EMISFACT  SRC23  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC23  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC23  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC24  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC24  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC24  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC25  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC25  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC25  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC26  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC26  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC26  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC27  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC27  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC27  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC28  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC28  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC28  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISUNIT  1.0E+06  GRAMS/SEC  MICROGRAMS/M**3
SO SRCGROUP  ALL
SO FINISHED

RE STARTING
RE DISCCART  466267.5  3769691.2  1.8
RE DISCCART  466263.3  3769800.2  1.8
RE DISCCART  466262.2  3769907.1  1.8
RE DISCCART  466260.1  3770064.1  1.8
RE DISCCART  466255.9  3770105.2  1.8
RE DISCCART  466257.0  3770246.7  1.8
RE DISCCART  466242.3  3770827.4  1.8
RE FINISHED

ME STARTING
ME SURFFILE  "C:\Documents and Settings\Environmental Svcs\Desktop\Holt&Melros DPM\ONTNKX\ONTNKX00.SFC"
ME PROFFILE  "C:\Documents and Settings\Environmental Svcs\Desktop\Holt&Melros DPM\ONTNKX\ONTNKX00.PFL"
ME PROFBASE  287  METERS
ME SURFDATA  72286  2000
ME UAIRDATA  3190  2000
ME STARTEND  2000  01  01  1  2000  12  31  24
ME FINISHED

OU STARTING
OU RECTABLE  24  FIRST
OU FINISHED

** PROJECTN  0 104 7 -177 0 0.9996 500000 0
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_00.JPG" I-10_0 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0 1
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_-2.JPG" I-10_-2 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_-3.JPG" I-10--3 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_-4.JPG" I-10_-4 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_-1.JPG" I-10_-1 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_+1.JPG" I-10_1 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0 1
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_+2.JPG" I-10_2 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0 1
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_+4.JPG" I-10_4 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0 1
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_+5.JPG" I-10_5 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0 1
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_1.1.JPG" I-10_1.1 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0
** OUTFILE  "C:\Documents and Settings\Environmental Svcs\Desktop\WVSP\WVSP_100608_2012.lst"
** RAWFILE  "C:\Documents and Settings\Environmental Svcs\Desktop\WVSP\WVSP_100608_2012.RAW"
** RAWFMT  2
** AMPDATUM  0
** HILLBOUN  0 0 0 0


 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                           ***        10/08/08
                                    ***                                                                  ***        10:05:10
 **MODELOPTs:                                                                                                       PAGE   1
 CONC                               FLAT   FLGPOL

                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.
```

```
  --  DEPOSITION LOGIC  --
 **Model Uses NO DRY DEPLETION.  DDPLETE =  F
 **Model Uses NO WET DEPLETION.  WDPLETE =  F
 **NO GAS DRY DEPOSITION Data Provided.

 **Model Uses RURAL Dispersion Only.

 **Model Uses User-Specified Options:
        1. Stack-tip Downwash.
        2. Model Assumes Receptors on FLAT Terrain.

 **Model Accepts FLAGPOLE Receptor Heights.

 **Model Calculates  1 Short Term Average(s) of:  24-HR
    and Calculates ANNUAL Averages

 **This Run Includes:    27 Source(s);      1 Source Group(s); and       7 Receptor(s)

 **The Model Assumes A Pollutant Type of:  PM10

 **Model Set To Continue RUNning After the Setup Testing.

 **Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   287.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =     1.2 MB of RAM.

 **Input Runstream File:          C:\Documents and Settings\Environmental Svcs\Desktop\WVSP\WVSP_100608_2012.dat
 **Output Print File:             C:\Documents and Settings\Environmental Svcs\Desktop\WVSP\WVSP_100608_2012.lst
```


*** AREALINE SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
SRC1	0	0.49600E-02	465873.9	3769671.8	287.0	3.50	427.60	10.00	0.80	0.00	NO	HROFDY
SRC2	0	0.49600E-02	466301.6	3769667.0	287.0	3.50	868.20	10.00	-1.50	0.00	NO	HROFDY
SRC3	0	0.49600E-02	467169.3	3769690.0	287.0	3.50	807.40	10.00	1.50	0.00	NO	HROFDY
SRC4	0	0.54000E-02	467975.4	3769669.0	287.0	3.50	879.30	10.00	4.80	0.00	NO	HROFDY
SRC5	0	0.54000E-02	468850.6	3769592.8	287.0	3.50	425.00	10.00	16.90	0.00	NO	HROFDY
SRC6	0	0.55200E-02	469257.1	3769470.0	287.0	3.50	317.60	10.00	18.10	0.00	NO	HROFDY
SRC7	0	0.55200E-02	469562.1	3769371.5	287.0	3.50	428.80	10.00	12.10	0.00	NO	HROFDY
SRC8	0	0.53400E-02	465872.4	3769660.0	287.0	3.50	425.60	10.00	2.70	0.00	NO	HROFDY
SRC9	0	0.53400E-02	466293.1	3769639.8	287.0	3.50	868.40	10.00	-1.00	0.00	NO	HROFDY
SRC10	0	0.53400E-02	467162.5	3769659.8	287.0	3.50	799.20	10.00	1.60	0.00	NO	HROFDY
SRC12	0	0.57800E-02	468839.1	3769566.2	287.0	3.50	223.70	10.00	15.30	0.00	NO	HROFDY
SRC13	0	0.57800E-02	469056.7	3769514.8	287.0	3.50	297.00	10.00	24.60	0.00	NO	HROFDY
SRC14	0	0.59100E-02	469332.3	3769394.8	287.0	3.50	207.60	10.00	16.80	0.00	NO	HROFDY
SRC15	0	0.59100E-02	469535.5	3769338.2	287.0	3.50	436.30	10.00	10.60	0.00	NO	HROFDY
SRC16	0	0.57800E-02	467961.5	3769638.5	287.0	3.50	879.60	10.00	5.30	0.00	NO	HROFDY
SRC17	0	0.44100E-02	465874.6	3769681.5	287.0	3.50	160.80	10.00	177.80	0.00	NO	HROFDY
SRC18	0	0.44100E-02	465713.9	3769670.2	287.0	3.50	223.10	10.00	172.10	0.00	NO	HROFDY
SRC19	0	0.44100E-02	465493.9	3769634.5	287.0	3.50	1494.50	10.00	179.10	0.00	NO	HROFDY
SRC20	0	0.44100E-02	463997.6	3769608.8	287.0	3.50	400.30	10.00	-178.80	0.00	NO	HROFDY
SRC21	0	0.43600E-02	463598.5	3769622.0	287.0	3.50	537.50	10.00	173.80	0.00	NO	HROFDY
SRC22	0	0.43600E-02	463064.2	3769558.5	287.0	3.50	1465.30	10.00	178.20	0.00	NO	HROFDY
SRC23	0	0.47400E-02	465871.8	3769660.5	287.0	3.50	216.70	10.00	175.10	0.00	NO	HROFDY
SRC24	0	0.47400E-02	465655.9	3769635.0	287.0	3.50	180.70	10.00	168.60	0.00	NO	HROFDY
SRC25	0	0.47400E-02	465479.8	3769594.0	287.0	3.50	1482.20	10.00	178.80	0.00	NO	HROFDY
SRC26	0	0.47400E-02	463998.9	3769568.5	287.0	3.50	401.70	10.00	-177.20	0.00	NO	HROFDY
SRC27	0	0.46600E-02	463598.7	3769587.8	287.0	3.50	501.20	10.00	173.90	0.00	NO	HROFDY
SRC28	0	0.46600E-02	463100.3	3769530.5	287.0	3.50	1502.10	10.00	178.30	0.00	NO	HROFDY

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	SRC1 , SRC2 , SRC3 , SRC4 , SRC5 , SRC6 , SRC7 , SRC8 , SRC9 , SRC10 , SRC12 , SRC13 ,
	SRC14 , SRC15 , SRC16 , SRC17 , SRC18 , SRC19 , SRC20 , SRC21 , SRC22 , SRC23 , SRC24 , SRC25 ,
	SRC26 , SRC27 , SRC28 ,

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = SRC1   ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC2   ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC3   ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC4   ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00
13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

SOURCE ID = SRC5   ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00
13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = SRC6   ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00
13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

SOURCE ID = SRC7   ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00

13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

SOURCE ID = SRC8 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC9 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC10 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = SRC12 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC13 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC14 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC15 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC16 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = SRC17 ; SOURCE TYPE = AREALINE :

1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC18 ; SOURCE TYPE = AREALINE :

1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC19 ; SOURCE TYPE = AREALINE :

1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC20 ; SOURCE TYPE = AREALINE :

1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC21 ; SOURCE TYPE = AREALINE :

1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00
13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = SRC22 ; SOURCE TYPE = AREALINE :

1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00
13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

SOURCE ID = SRC23 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC24 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC25 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC26 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

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                              * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

    HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


 SOURCE ID = SRC27    ;  SOURCE TYPE = AREALINE :
       1  .31300E+00      2  .25700E+00      3  .25800E+00      4  .31700E+00      5  .35600E+00      6  .43000E+00
       7  .64300E+00      8  .76300E+00      9  .86700E+00     10  .92500E+00     11  .92100E+00     12  .10000E+01
      13  .94600E+00     14  .93700E+00     15  .89900E+00     16  .77900E+00     17  .71300E+00     18  .65000E+00
      19  .60600E+00     20  .51300E+00     21  .47200E+00     22  .42900E+00     23  .38200E+00     24  .33600E+00


 SOURCE ID = SRC28    ;  SOURCE TYPE = AREALINE :
       1  .31300E+00      2  .25700E+00      3  .25800E+00      4  .31700E+00      5  .35600E+00      6  .43000E+00
       7  .64300E+00      8  .76300E+00      9  .86700E+00     10  .92500E+00     11  .92100E+00     12  .10000E+01
      13  .94600E+00     14  .93700E+00     15  .89900E+00     16  .77900E+00     17  .71300E+00     18  .65000E+00
      19  .60600E+00     20  .51300E+00     21  .47200E+00     22  .42900E+00     23  .38200E+00     24  .33600E+00
```



```
                                               *** DISCRETE CARTESIAN RECEPTORS ***
                                             (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

    ( 466267.5, 3769691.2,     287.0,     287.0,       1.8);        ( 466263.3, 3769800.2,     287.0,     287.0,       1.8);
    ( 466262.2, 3769907.0,     287.0,     287.0,       1.8);        ( 466260.1, 3770064.0,     287.0,     287.0,       1.8);
    ( 466255.9, 3770105.2,     287.0,     287.0,       1.8);        ( 466257.0, 3770246.8,     287.0,     287.0,       1.8);
    ( 466242.3, 3770827.5,     287.0,     287.0,       1.8);
```



```
                                              *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                               (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

                      METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2000   1  1  1
                                                             AND END DATE: 2000  12 31 24

               NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.


                                     *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                             (METERS/SEC)

                                                    1.54,   3.09,   5.14,   8.23,  10.80,
```



```
                                       *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\Documents and Settings\Environmental Svcs\Desktop\Holt&Melros DPM\ONTNKX\ONTN   Met Version:  06341
   Profile file:   C:\Documents and Settings\Environmental Svcs\Desktop\Holt&Melros DPM\ONTNKX\ONTN
   Surface format: (3(I2,1X),I3,1X,I2,1X,F6.1,1X,3(F6.3,1X),2(F5.0,1X),F8.1,1X,F6.3,1X,2(F6.2,1X),F7.2,1X,F5.0,3(1X,F6.1))
   Profile format: (4(I2,1X),F6.1,1X,I1,1X,F5.0,1X,F7.2,1X,F7.2,1X,F6.1,1X,F7.2)
   Surface station no.:     72286                  Upper air station no.:     3190
                Name: UNKNOWN                                    Name: UNKNOWN
                Year:   2000                                     Year:   2000

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

```
 00 01 01   1 01   -2.8  0.065 -9.000 -9.000 -999.   38.      8.6  0.10    1.05    1.00    1.50  171.   10.0  280.9    2.0
 00 01 01   1 02   -7.2  0.130 -9.000 -9.000 -999.  108.     26.9  0.10    1.05    1.00    2.10  168.   10.0  280.4    2.0
 00 01 01   1 03 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10    1.05    1.00    0.00    0.   10.0  280.4    2.0
 00 01 01   1 04 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10    1.05    1.00    0.00    0.   10.0  280.9    2.0
 00 01 01   1 05 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10    1.05    1.00    0.00    0.   10.0  280.9    2.0
 00 01 01   1 06 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10    1.05    1.00    0.00    0.   10.0  280.9    2.0
 00 01 01   1 07 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10    1.05    1.00    0.00    0.   10.0  280.9    2.0
 00 01 01   1 08   -6.6  0.141 -9.000 -9.000 -999.  122.     37.3  0.10    1.05    0.53    2.10  183.   10.0  280.9    2.0
 00 01 01   1 09    2.8  0.062  0.122  0.007   22.   37.     -7.3  0.12    1.05    0.31    0.50  217.   10.0  281.4    2.0
 00 01 01   1 10   15.2 -9.000 -9.000 -9.000   71. -999. -99999.0  0.10    1.05    0.24    0.00    0.   10.0  282.0    2.0
 00 01 01   1 11   24.8 -9.000 -9.000 -9.000  128. -999. -99999.0  0.10    1.05    0.21    0.00    0.   10.0  285.9    2.0
 00 01 01   1 12   28.3 -9.000 -9.000 -9.000  240. -999. -99999.0  0.10    1.05    0.20    0.00    0.   10.0  284.2    2.0
 00 01 01   1 13   27.9  0.257  0.652  0.005  348.  299.    -53.3  0.11    1.05    0.20    2.60  253.   10.0  284.2    2.0
 00 01 01   1 14   52.2  0.228  0.940  0.005  557.  250.    -19.8  0.12    1.05    0.22    2.10  239.   10.0  284.2    2.0
 00 01 01   1 15   13.5  0.206  0.618  0.005  612.  216.    -57.0  0.11    1.05    0.25    2.10  262.   10.0  284.2    2.0
 00 01 01   1 16   10.1  0.288  0.573  0.005  652.  355.   -207.5  0.12    1.05    0.34    3.10  234.   10.0  284.2    2.0
 00 01 01   1 17  -11.3  0.195 -9.000 -9.000 -999.  201.     56.9  0.12    1.05    0.62    2.60  231.   10.0  284.2    2.0
 00 01 01   1 18  -16.3  0.299 -9.000 -9.000 -999.  376.    144.2  0.12    1.05    1.00    3.60  227.   10.0  284.2    2.0
 00 01 01   1 19  -10.7  0.197 -9.000 -9.000 -999.  205.     62.0  0.11    1.05    1.00    2.60  254.   10.0  283.1    2.0
 00 01 01   1 20  -13.6  0.249 -9.000 -9.000 -999.  285.     98.7  0.11    1.05    1.00    3.10  267.   10.0  282.0    2.0
 00 01 01   1 21   -7.5  0.136 -9.000 -9.000 -999.  121.     29.6  0.11    1.05    1.00    2.10  260.   10.0  282.0    2.0
 00 01 01   1 22   -2.8  0.065 -9.000 -9.000 -999.   40.      8.6  0.10    1.05    1.00    1.50  162.   10.0  282.0    2.0
 00 01 01   1 23  -10.8  0.196 -9.000 -9.000 -999.  200.     61.3  0.11    1.05    1.00    2.60  260.   10.0  280.9    2.0
 00 01 01   1 24   -7.5  0.137 -9.000 -9.000 -999.  117.     29.7  0.12    1.05    1.00    2.10  230.   10.0  280.9    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 00 01 01 01   10.0 1  171.    1.50   281.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                             ***        10/08/08
                                    ***                                                                    ***        10:05:10
 **MODELOPTs:                                                                                                         PAGE  13
 CONC                               FLAT   FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   1 YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):      SRC1     , SRC2     , SRC3     , SRC4     , SRC5     , SRC6     , SRC7     ,
          SRC8     , SRC9     , SRC10    , SRC12    , SRC13    , SRC14    , SRC15    , SRC16    , SRC17    , SRC18    , SRC19    , SRC20    ,
          SRC21    , SRC22    , SRC23    , SRC24    , SRC25    , SRC26    , SRC27    , SRC28    ,

                                                  *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM10     IN MICROGRAMS/M**3                                **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         466267.50    3769691.25     5407.97217                       466263.31    3769800.25     1908.24170
         466262.19    3769907.00     1189.45068                       466260.09    3770064.00      757.85004
         466255.91    3770105.25      691.23022                       466257.00    3770246.75      532.05475
         466242.31    3770827.50      260.36346
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                             ***        10/08/08
                                    ***                                                                    ***        10:05:10
 **MODELOPTs:                                                                                                         PAGE  14
 CONC                               FLAT   FLGPOL

                             *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):      SRC1     , SRC2     , SRC3     , SRC4     , SRC5     , SRC6     , SRC7     ,
          SRC8     , SRC9     , SRC10    , SRC12    , SRC13    , SRC14    , SRC15    , SRC16    , SRC17    , SRC18    , SRC19    , SRC20    ,
          SRC21    , SRC22    , SRC23    , SRC24    , SRC25    , SRC26    , SRC27    , SRC28    ,

                                                  *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM10     IN MICROGRAMS/M**3                                **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)               X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        466267.50   3769691.25   12093.68652c (00101224)             466263.31   3769800.25    7272.28906c (00021524)
        466262.19   3769907.00    4717.22021c (00021524)             466260.09   3770064.00    3567.52832c (00021524)
        466255.91   3770105.25    3360.14502c (00021524)             466257.00   3770246.75    2723.62866c (00021524)
        466242.31   3770827.50    1254.56934c (00080724)
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                             ***        10/08/08
                                    ***                                                                    ***        10:05:10
 **MODELOPTs:                                                                                                         PAGE  15
 CONC                               FLAT   FLGPOL

                                                 *** THE SUMMARY OF MAXIMUM ANNUAL (   1 YRS) RESULTS ***


                                          ** CONC OF PM10     IN MICROGRAMS/M**3                                **

                                                                                                               NETWORK
 GROUP ID                          AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)   OF TYPE  GRID-ID
```

```
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 ALL      1ST HIGHEST VALUE IS    5407.97217 AT (  466267.50,  3769691.25,    287.00,    287.00,      1.80)  DC
          2ND HIGHEST VALUE IS    1908.24170 AT (  466263.31,  3769800.25,    287.00,    287.00,      1.80)  DC
          3RD HIGHEST VALUE IS    1189.45068 AT (  466262.19,  3769907.00,    287.00,    287.00,      1.80)  DC
          4TH HIGHEST VALUE IS     757.85004 AT (  466260.09,  3770064.00,    287.00,    287.00,      1.80)  DC
          5TH HIGHEST VALUE IS     691.23022 AT (  466255.91,  3770105.25,    287.00,    287.00,      1.80)  DC
          6TH HIGHEST VALUE IS     532.05475 AT (  466257.00,  3770246.75,    287.00,    287.00,      1.80)  DC
          7TH HIGHEST VALUE IS     260.36346 AT (  466242.31,  3770827.50,    287.00,    287.00,      1.80)  DC
          8TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,      0.00,      0.00)
          9TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,      0.00,      0.00)
         10TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,      0.00,      0.00)

  *** RECEPTOR TYPES:  GC = GRIDCART
                       GP = GRIDPOLR
                       DC = DISCCART
                       DP = DISCPOLR
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                            ***        10/08/08
                                    ***                                                                   ***        10:05:10
 **MODELOPTs:                                                                                                        PAGE  16
 CONC                               FLAT   FLGPOL

                                                  *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

                                          ** CONC OF PM10     IN MICROGRAMS/M**3                          **

                                                         DATE                                                               NETWORK
 GROUP ID                         AVERAGE CONC      (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 ALL      HIGH  1ST HIGH VALUE IS   12093.68652c ON 00101224: AT (  466267.50,  3769691.25,    287.00,    287.00,      1.80)  DC

  *** RECEPTOR TYPES:  GC = GRIDCART
                       GP = GRIDPOLR
                       DC = DISCCART
                       DP = DISCPOLR
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                            ***        10/08/08
                                    ***                                                                   ***        10:05:10
 **MODELOPTs:                                                                                                        PAGE  17
 CONC                               FLAT   FLGPOL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           0 Warning Message(s)
 A Total of        1908 Informational Message(s)

 A Total of        1908 Calm Hours Identified

 A Total of           0 Missing Hours Identified (  0.00 Percent)

    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

```
1                     AERMOD PRIME - (DATED 07026)

                     AERMODPRx    VERSION  4.6.0
             (C) COPYRIGHT 1998-2007, Trinity Consultants

 Run Began on 10/08/2008 at 10:25:38

 ** BREEZE AERMOD Pro v5.2.1 - C:\Documents and Settings\Environmental Svcs\Desktop\WVSP\WVSP_100808_2012.dat
 ** Trinity Consultants

 ** PRIME

 CO STARTING
 CO TITLEONE  WVSPA
 CO MODELOPT  CONC  FLAT
 CO AVERTIME  24  ANNUAL
 CO POLLUTID  PM10
 CO FLAGPOLE  1.5
 CO RUNORNOT  RUN
 CO FINISHED

 SO STARTING
 SO ELEVUNIT  METERS
 SO LOCATION  SRC1  AREALINE  465873.9  3769671.7  0
 ** SRCDESCR  NB I-10 Riverside to Pepper
 SO LOCATION  SRC2  AREALINE  466301.6  3769667.0  0
 ** SRCDESCR  NB I-10 Riverside to Pepper
 SO LOCATION  SRC3  AREALINE  467169.3  3769689.9  0
 ** SRCDESCR  NB I-10 Riverside to Pepper
 SO LOCATION  SRC4  AREALINE  467975.4  3769669.0  0
 ** SRCDESCR  NB-10 Pepper to Rancho
 SO LOCATION  SRC5  AREALINE  468850.6  3769592.7  0
 ** SRCDESCR  NB-10 Pepper to Rancho
 SO LOCATION  SRC6  AREALINE  469257.1  3769470.0  0
 ** SRCDESCR  NB I-10 E of Rancho
 SO LOCATION  SRC7  AREALINE  469562.1  3769371.6  0
 ** SRCDESCR  NB I-10 E of Rancho
 SO LOCATION  SRC8  AREALINE  465872.4  3769659.9  0
 ** SRCDESCR  SB I-10 Riverside to Pepper
 SO LOCATION  SRC9  AREALINE  466293.1  3769639.7  0
 ** SRCDESCR  SB I-10 Riverside to Pepper
 SO LOCATION  SRC10  AREALINE  467162.5  3769659.7  0
 ** SRCDESCR  SB I-10 Riverside to Pepper
 SO LOCATION  SRC12  AREALINE  468839.1  3769566.2  0
 ** SRCDESCR  SB I-10 Pepper to Rancho
 SO LOCATION  SRC13  AREALINE  469056.7  3769514.7  0
 ** SRCDESCR  SB I-10 Pepper to Rancho
 SO LOCATION  SRC14  AREALINE  469332.3  3769394.8  0
 ** SRCDESCR  SB I-10 E of Rancho
 SO LOCATION  SRC15  AREALINE  469535.5  3769338.3  0
 ** SRCDESCR  SB I-10 E of Rancho
 SO LOCATION  SRC16  AREALINE  467961.5  3769638.4  0
 ** SRCDESCR  SB I-10 Pepper to Rancho
 SO LOCATION  SRC17  AREALINE  465874.6  3769681.5  0
 ** SRCDESCR  NB I-10 Cedar to Riverside
 SO LOCATION  SRC18  AREALINE  465713.9  3769670.2  0
 ** SRCDESCR  NB I-10 Cedar to Riverside
 SO LOCATION  SRC19  AREALINE  465493.9  3769634.4  0
 ** SRCDESCR  NB I-10 Cedar to Riverside
 SO LOCATION  SRC20  AREALINE  463997.6  3769608.8  0
 ** SRCDESCR  NB I-10 Cedar to Riverside
 SO LOCATION  SRC21  AREALINE  463598.5  3769622.1  0
 ** SRCDESCR  NB I-10 W of Cedar
 SO LOCATION  SRC22  AREALINE  463064.2  3769558.6  0
 ** SRCDESCR  NB I-10 W of Cedar
 SO LOCATION  SRC23  AREALINE  465871.8  3769660.5  0
 ** SRCDESCR  SB I-10 Cedar to Riverside
 SO LOCATION  SRC24  AREALINE  465655.9  3769634.9  0
 ** SRCDESCR  SB I-10 Cedar to Riverside
 SO LOCATION  SRC25  AREALINE  465479.8  3769594.0  0
 ** SRCDESCR  SB I-10 Cedar to Riverside
 SO LOCATION  SRC26  AREALINE  463998.9  3769568.4  0
 ** SRCDESCR  SB I-10 Cedar to Riverside
 SO LOCATION  SRC27  AREALINE  463598.7  3769587.8  0
 ** SRCDESCR  SB I-10 W of Cedar
 SO LOCATION  SRC28  AREALINE  463100.3  3769530.5  0
 ** SRCDESCR  SB I-10 W of Cedar
 SO SRCPARAM  SRC1  1.527000E-02  3.5  427.6  10  0.8  0
 SO SRCPARAM  SRC2  1.527000E-02  3.5  868.2  10  -1.5  0
 SO SRCPARAM  SRC3  1.527000E-02  3.5  807.4  10  1.5  0
 SO SRCPARAM  SRC4  1.663000E-02  3.5  879.3  10  4.8  0
 SO SRCPARAM  SRC5  1.663000E-02  3.5  425  10  16.9  0
 SO SRCPARAM  SRC6  1.700000E-02  3.5  317.6  10  18.1  0
```

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SO SRCPARAM  SRC7  1.700000E-02  3.5  428.8  10  12.1  0
SO SRCPARAM  SRC8  1.643000E-02  3.5  425.6  10  2.7  0
SO SRCPARAM  SRC9  1.643000E-02  3.5  868.4  10  -1  0
SO SRCPARAM  SRC10  1.643000E-02  3.5  799.2  10  1.6  0
SO SRCPARAM  SRC12  1.778000E-02  3.5  223.7  10  15.3  0
SO SRCPARAM  SRC13  1.778000E-02  3.5  297  10  24.6  0
SO SRCPARAM  SRC14  1.818000E-02  3.5  207.6  10  16.8  0
SO SRCPARAM  SRC15  1.818000E-02  3.5  436.3  10  10.6  0
SO SRCPARAM  SRC16  1.778000E-02  3.5  879.6  10  5.3  0
SO SRCPARAM  SRC17  1.356000E-02  3.5  160.8  10  177.8  0
SO SRCPARAM  SRC18  1.356000E-02  3.5  223.1  10  172.1  0
SO SRCPARAM  SRC19  1.356000E-02  3.5  1494.5  10  179.1  0
SO SRCPARAM  SRC20  1.356000E-02  3.5  400.3  10  -178.8  0
SO SRCPARAM  SRC21  1.341000E-02  3.5  537.5  10  173.8  0
SO SRCPARAM  SRC22  1.341000E-02  3.5  1465.3  10  178.2  0
SO SRCPARAM  SRC23  1.460000E-02  3.5  216.7  10  175.1  0
SO SRCPARAM  SRC24  1.460000E-02  3.5  180.7  10  168.6  0
SO SRCPARAM  SRC25  1.460000E-02  3.5  1482.2  10  178.8  0
SO SRCPARAM  SRC26  1.460000E-02  3.5  401.7  10  -177.2  0
SO SRCPARAM  SRC27  1.434000E-02  3.5  501.2  10  173.9  0
SO SRCPARAM  SRC28  1.434000E-02  3.5  1502.1  10  178.3  0
SO EMISFACT  SRC1  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC1  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC1  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC2  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC2  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC2  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC3  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC3  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC3  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC4  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
SO EMISFACT  SRC4  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC4  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC4  HROFDY  0.324
SO EMISFACT  SRC5  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
SO EMISFACT  SRC5  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC5  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC5  HROFDY  0.324
SO EMISFACT  SRC6  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
SO EMISFACT  SRC6  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC6  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC6  HROFDY  0.324
SO EMISFACT  SRC7  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
SO EMISFACT  SRC7  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC7  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC7  HROFDY  0.324
SO EMISFACT  SRC8  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC8  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC8  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC9  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC9  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC9  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC10  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC10  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC10  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC12  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC12  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC12  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC13  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC13  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC13  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC14  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC14  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC14  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC15  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC15  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC15  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC16  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC16  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC16  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC17  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC17  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC17  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC18  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC18  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC18  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC19  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC19  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC19  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC20  HROFDY  0.209  0.169  0.148  0.202  0.33  0.543  0.725  0.767
SO EMISFACT  SRC20  HROFDY  0.922  0.961  1.007  1.0  0.944  0.998  0.953  0.9
SO EMISFACT  SRC20  HROFDY  0.821  0.858  0.73  0.65  0.63  0.579  0.459  0.326
SO EMISFACT  SRC21  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
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SO EMISFACT  SRC21  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC21  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC21  HROFDY  0.324
SO EMISFACT  SRC22  HROFDY  0.208  0.168  0.148  0.2  0.328  0.539  0.72  0.762
SO EMISFACT  SRC22  HROFDY  0.916  0.955  1.0  0.993  0.938  0.992  0.946  0.894
SO EMISFACT  SRC22  HROFDY  0.816  0.853  0.725  0.646  0.626  0.575  0.456
SO EMISFACT  SRC22  HROFDY  0.324
SO EMISFACT  SRC23  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC23  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC23  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC24  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC24  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC24  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC25  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC25  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC25  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC26  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC26  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC26  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC27  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC27  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC27  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISFACT  SRC28  HROFDY  0.313  0.257  0.258  0.317  0.356  0.43  0.643  0.763
SO EMISFACT  SRC28  HROFDY  0.867  0.925  0.921  1.0  0.946  0.937  0.899  0.779
SO EMISFACT  SRC28  HROFDY  0.713  0.65  0.606  0.513  0.472  0.429  0.382  0.336
SO EMISUNIT  1.0E+06  GRAMS/SEC  MICROGRAMS/M**3
SO SRCGROUP  ALL
SO FINISHED

RE STARTING
RE DISCCART  466267.5  3769691.2  1.8
RE DISCCART  466263.3  3769800.2  1.8
RE DISCCART  466262.2  3769907.1  1.8
RE DISCCART  466260.1  3770064.1  1.8
RE DISCCART  466255.9  3770105.2  1.8
RE DISCCART  466257.0  3770246.7  1.8
RE DISCCART  466242.3  3770827.4  1.8
RE FINISHED

ME STARTING
ME SURFFILE  "C:\Documents and Settings\Environmental Svcs\Desktop\Holt&Melros DPM\ONTNKX\ONTNKX00.SFC"
ME PROFFILE  "C:\Documents and Settings\Environmental Svcs\Desktop\Holt&Melros DPM\ONTNKX\ONTNKX00.PFL"
ME PROFBASE  287  METERS
ME SURFDATA  72286  2000
ME UAIRDATA  3190  2000
ME STARTEND  2000  01  01  1  2000  12  31  24
ME FINISHED

OU STARTING
OU RECTABLE  24  FIRST
OU FINISHED

** PROJECTN  0 104 7 -177 0 0.9996 500000 0
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_00.JPG" I-10_0 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0 1
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_-2.JPG" I-10_-2 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_-3.JPG" I-10--3 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_-4.JPG" I-10_-4 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_-1.JPG" I-10_-1 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_+1.JPG" I-10_1 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0 1
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_+2.JPG" I-10_2 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0 1
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_+4.JPG" I-10_4 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0 1
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_+5.JPG" I-10_5 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0 0 1
** MAPLAYER "C:\DOCUMENTS AND SETTINGS\ENVIRONMENTAL SVCS\DESKTOP\WVSP\WVSP_1.1.JPG" I-10_1.1 3 UNKNOWN UNKNOWN 1 0 0 0 0 0 0 0 0 0
** OUTFILE  "C:\Documents and Settings\Environmental Svcs\Desktop\WVSP\WVSP_100808_2012.lst"
** RAWFILE  "C:\Documents and Settings\Environmental Svcs\Desktop\WVSP\WVSP_100808_2012.RAW"
** RAWFMT  2
** AMPDATUM  0
** HILLBOUN  0 0 0 0


***********************************
*** SETUP Finishes Successfully ***
***********************************

1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                               ***        10/08/08
                                    ***                                                                      ***        10:25:38
 **MODELOPTs:                                                                                                           PAGE   1
 CONC                               FLAT   FLGPOL

                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.
```

-- DEPOSITION LOGIC --

**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO GAS DRY DEPOSITION Data Provided.

**Model Uses RURAL Dispersion Only.

**Model Uses User-Specified Options:
1. Stack-tip Downwash.
2. Model Assumes Receptors on FLAT Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

**Model Calculates 1 Short Term Average(s) of: 24-HR
and Calculates ANNUAL Averages

**This Run Includes: 27 Source(s); 1 Source Group(s); and 7 Receptor(s)

**The Model Assumes A Pollutant Type of: PM10

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
Model Outputs Tables of ANNUAL Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 287.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 1.2 MB of RAM.

**Input Runstream File: C:\Documents and Settings\Environmental Svcs\Desktop\WVSP\WVSP_100808_2012.dat
**Output Print File: C:\Documents and Settings\Environmental Svcs\Desktop\WVSP\WVSP_100808_2012.lst

*** AREALINE SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
SRC1	0	0.15270E-01	465873.9	3769671.8	287.0	3.50	427.60	10.00	0.80	0.00	NO	HROFDY
SRC2	0	0.15270E-01	466301.6	3769667.0	287.0	3.50	868.20	10.00	-1.50	0.00	NO	HROFDY
SRC3	0	0.15270E-01	467169.3	3769690.0	287.0	3.50	807.40	10.00	1.50	0.00	NO	HROFDY
SRC4	0	0.16630E-01	467975.4	3769669.0	287.0	3.50	879.30	10.00	4.80	0.00	NO	HROFDY
SRC5	0	0.16630E-01	468850.6	3769592.8	287.0	3.50	425.00	10.00	16.90	0.00	NO	HROFDY
SRC6	0	0.17000E-01	469257.1	3769470.0	287.0	3.50	317.60	10.00	18.10	0.00	NO	HROFDY
SRC7	0	0.17000E-01	469562.1	3769371.5	287.0	3.50	428.80	10.00	12.10	0.00	NO	HROFDY
SRC8	0	0.16430E-01	465872.4	3769660.0	287.0	3.50	425.60	10.00	2.70	0.00	NO	HROFDY
SRC9	0	0.16430E-01	466293.1	3769639.8	287.0	3.50	868.40	10.00	-1.00	0.00	NO	HROFDY
SRC10	0	0.16430E-01	467162.5	3769659.8	287.0	3.50	799.20	10.00	1.60	0.00	NO	HROFDY
SRC12	0	0.17780E-01	468839.1	3769566.2	287.0	3.50	223.70	10.00	15.30	0.00	NO	HROFDY
SRC13	0	0.17780E-01	469056.7	3769514.8	287.0	3.50	297.00	10.00	24.60	0.00	NO	HROFDY
SRC14	0	0.18180E-01	469332.3	3769394.8	287.0	3.50	207.60	10.00	16.80	0.00	NO	HROFDY
SRC15	0	0.18180E-01	469535.5	3769338.2	287.0	3.50	436.30	10.00	10.60	0.00	NO	HROFDY
SRC16	0	0.17780E-01	467961.5	3769638.5	287.0	3.50	879.60	10.00	5.30	0.00	NO	HROFDY
SRC17	0	0.13560E-01	465874.6	3769681.5	287.0	3.50	160.80	10.00	177.80	0.00	NO	HROFDY
SRC18	0	0.13560E-01	465713.9	3769670.2	287.0	3.50	223.10	10.00	172.10	0.00	NO	HROFDY
SRC19	0	0.13560E-01	465493.9	3769634.5	287.0	3.50	1494.50	10.00	179.10	0.00	NO	HROFDY
SRC20	0	0.13560E-01	463997.6	3769608.8	287.0	3.50	400.30	10.00	-178.80	0.00	NO	HROFDY
SRC21	0	0.13410E-01	463598.5	3769622.0	287.0	3.50	537.50	10.00	173.80	0.00	NO	HROFDY
SRC22	0	0.13410E-01	463064.2	3769558.5	287.0	3.50	1465.30	10.00	178.20	0.00	NO	HROFDY
SRC23	0	0.14600E-01	465871.8	3769660.5	287.0	3.50	216.70	10.00	175.10	0.00	NO	HROFDY
SRC24	0	0.14600E-01	465655.9	3769635.0	287.0	3.50	180.70	10.00	168.60	0.00	NO	HROFDY
SRC25	0	0.14600E-01	465479.8	3769594.0	287.0	3.50	1482.20	10.00	178.80	0.00	NO	HROFDY
SRC26	0	0.14600E-01	463998.9	3769568.5	287.0	3.50	401.70	10.00	-177.20	0.00	NO	HROFDY
SRC27	0	0.14340E-01	463598.7	3769587.8	287.0	3.50	501.20	10.00	173.90	0.00	NO	HROFDY
SRC28	0	0.14340E-01	463100.3	3769530.5	287.0	3.50	1502.10	10.00	178.30	0.00	NO	HROFDY

CONC FLAT FLGPOL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

ALL SRC1 , SRC2 , SRC3 , SRC4 , SRC5 , SRC6 , SRC7 , SRC8 , SRC9 , SRC10 , SRC12 , SRC13 ,

SRC14 , SRC15 , SRC16 , SRC17 , SRC18 , SRC19 , SRC20 , SRC21 , SRC22 , SRC23 , SRC24 , SRC25 ,

SRC26 , SRC27 , SRC28 ,

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = SRC1 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC2 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC3 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC4 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00
13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

SOURCE ID = SRC5 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00
13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = SRC6 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00
13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

SOURCE ID = SRC7 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00

```
    13   .93800E+00     14   .99200E+00     15   .94600E+00     16   .89400E+00     17   .81600E+00     18   .85300E+00
    19   .72500E+00     20   .64600E+00     21   .62600E+00     22   .57500E+00     23   .45600E+00     24   .32400E+00


 SOURCE ID = SRC8     ;  SOURCE TYPE = AREALINE :
     1   .31300E+00      2   .25700E+00      3   .25800E+00      4   .31700E+00      5   .35600E+00      6   .43000E+00
     7   .64300E+00      8   .76300E+00      9   .86700E+00     10   .92500E+00     11   .92100E+00     12   .10000E+01
    13   .94600E+00     14   .93700E+00     15   .89900E+00     16   .77900E+00     17   .71300E+00     18   .65000E+00
    19   .60600E+00     20   .51300E+00     21   .47200E+00     22   .42900E+00     23   .38200E+00     24   .33600E+00


 SOURCE ID = SRC9     ;  SOURCE TYPE = AREALINE :
     1   .31300E+00      2   .25700E+00      3   .25800E+00      4   .31700E+00      5   .35600E+00      6   .43000E+00
     7   .64300E+00      8   .76300E+00      9   .86700E+00     10   .92500E+00     11   .92100E+00     12   .10000E+01
    13   .94600E+00     14   .93700E+00     15   .89900E+00     16   .77900E+00     17   .71300E+00     18   .65000E+00
    19   .60600E+00     20   .51300E+00     21   .47200E+00     22   .42900E+00     23   .38200E+00     24   .33600E+00


 SOURCE ID = SRC10    ;  SOURCE TYPE = AREALINE :
     1   .31300E+00      2   .25700E+00      3   .25800E+00      4   .31700E+00      5   .35600E+00      6   .43000E+00
     7   .64300E+00      8   .76300E+00      9   .86700E+00     10   .92500E+00     11   .92100E+00     12   .10000E+01
    13   .94600E+00     14   .93700E+00     15   .89900E+00     16   .77900E+00     17   .71300E+00     18   .65000E+00
    19   .60600E+00     20   .51300E+00     21   .47200E+00     22   .42900E+00     23   .38200E+00     24   .33600E+00

1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                         ***        10/08/08
                                    ***                                                                ***        10:25:38
 **MODELOPTs:                                                                                                     PAGE   6
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                            * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *


    HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


 SOURCE ID = SRC12    ;  SOURCE TYPE = AREALINE :
     1   .31300E+00      2   .25700E+00      3   .25800E+00      4   .31700E+00      5   .35600E+00      6   .43000E+00
     7   .64300E+00      8   .76300E+00      9   .86700E+00     10   .92500E+00     11   .92100E+00     12   .10000E+01
    13   .94600E+00     14   .93700E+00     15   .89900E+00     16   .77900E+00     17   .71300E+00     18   .65000E+00
    19   .60600E+00     20   .51300E+00     21   .47200E+00     22   .42900E+00     23   .38200E+00     24   .33600E+00


 SOURCE ID = SRC13    ;  SOURCE TYPE = AREALINE :
     1   .31300E+00      2   .25700E+00      3   .25800E+00      4   .31700E+00      5   .35600E+00      6   .43000E+00
     7   .64300E+00      8   .76300E+00      9   .86700E+00     10   .92500E+00     11   .92100E+00     12   .10000E+01
    13   .94600E+00     14   .93700E+00     15   .89900E+00     16   .77900E+00     17   .71300E+00     18   .65000E+00
    19   .60600E+00     20   .51300E+00     21   .47200E+00     22   .42900E+00     23   .38200E+00     24   .33600E+00


 SOURCE ID = SRC14    ;  SOURCE TYPE = AREALINE :
     1   .31300E+00      2   .25700E+00      3   .25800E+00      4   .31700E+00      5   .35600E+00      6   .43000E+00
     7   .64300E+00      8   .76300E+00      9   .86700E+00     10   .92500E+00     11   .92100E+00     12   .10000E+01
    13   .94600E+00     14   .93700E+00     15   .89900E+00     16   .77900E+00     17   .71300E+00     18   .65000E+00
    19   .60600E+00     20   .51300E+00     21   .47200E+00     22   .42900E+00     23   .38200E+00     24   .33600E+00


 SOURCE ID = SRC15    ;  SOURCE TYPE = AREALINE :
     1   .31300E+00      2   .25700E+00      3   .25800E+00      4   .31700E+00      5   .35600E+00      6   .43000E+00
     7   .64300E+00      8   .76300E+00      9   .86700E+00     10   .92500E+00     11   .92100E+00     12   .10000E+01
    13   .94600E+00     14   .93700E+00     15   .89900E+00     16   .77900E+00     17   .71300E+00     18   .65000E+00
    19   .60600E+00     20   .51300E+00     21   .47200E+00     22   .42900E+00     23   .38200E+00     24   .33600E+00


 SOURCE ID = SRC16    ;  SOURCE TYPE = AREALINE :
     1   .31300E+00      2   .25700E+00      3   .25800E+00      4   .31700E+00      5   .35600E+00      6   .43000E+00
     7   .64300E+00      8   .76300E+00      9   .86700E+00     10   .92500E+00     11   .92100E+00     12   .10000E+01
    13   .94600E+00     14   .93700E+00     15   .89900E+00     16   .77900E+00     17   .71300E+00     18   .65000E+00
    19   .60600E+00     20   .51300E+00     21   .47200E+00     22   .42900E+00     23   .38200E+00     24   .33600E+00

1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                         ***        10/08/08
                                    ***                                                                ***        10:25:38
 **MODELOPTs:                                                                                                     PAGE   7
 CONC                               FLAT   FLGPOL

                            * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *


    HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


 SOURCE ID = SRC17    ;  SOURCE TYPE = AREALINE :
```

1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC18 ; SOURCE TYPE = AREALINE :

1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC19 ; SOURCE TYPE = AREALINE :

1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC20 ; SOURCE TYPE = AREALINE :

1	.20900E+00	2	.16900E+00	3	.14800E+00	4	.20200E+00	5	.33000E+00	6	.54300E+00
7	.72500E+00	8	.76700E+00	9	.92200E+00	10	.96100E+00	11	.10070E+01	12	.10000E+01
13	.94400E+00	14	.99800E+00	15	.95300E+00	16	.90000E+00	17	.82100E+00	18	.85800E+00
19	.73000E+00	20	.65000E+00	21	.63000E+00	22	.57900E+00	23	.45900E+00	24	.32600E+00

SOURCE ID = SRC21 ; SOURCE TYPE = AREALINE :

1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00
13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = SRC22 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.20800E+00	2	.16800E+00	3	.14800E+00	4	.20000E+00	5	.32800E+00	6	.53900E+00
7	.72000E+00	8	.76200E+00	9	.91600E+00	10	.95500E+00	11	.10000E+01	12	.99300E+00
13	.93800E+00	14	.99200E+00	15	.94600E+00	16	.89400E+00	17	.81600E+00	18	.85300E+00
19	.72500E+00	20	.64600E+00	21	.62600E+00	22	.57500E+00	23	.45600E+00	24	.32400E+00

SOURCE ID = SRC23 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC24 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC25 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC26 ; SOURCE TYPE = AREALINE :

1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = SRC27 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

SOURCE ID = SRC28 ; SOURCE TYPE = AREALINE :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.31300E+00	2	.25700E+00	3	.25800E+00	4	.31700E+00	5	.35600E+00	6	.43000E+00
7	.64300E+00	8	.76300E+00	9	.86700E+00	10	.92500E+00	11	.92100E+00	12	.10000E+01
13	.94600E+00	14	.93700E+00	15	.89900E+00	16	.77900E+00	17	.71300E+00	18	.65000E+00
19	.60600E+00	20	.51300E+00	21	.47200E+00	22	.42900E+00	23	.38200E+00	24	.33600E+00

```
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                  ***        10/08/08
                                    ***                                                         ***        10:25:38
 **MODELOPTs:                                                                                              PAGE  10
 CONC                               FLAT   FLGPOL

                                  *** DISCRETE CARTESIAN RECEPTORS ***
                                (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                               (METERS)

    ( 466267.5, 3769691.2,     287.0,     287.0,       1.8);         ( 466263.3, 3769800.2,     287.0,     287.0,       1.8);
    ( 466262.2, 3769907.0,     287.0,     287.0,       1.8);         ( 466260.1, 3770064.0,     287.0,     287.0,       1.8);
    ( 466255.9, 3770105.2,     287.0,     287.0,       1.8);         ( 466257.0, 3770246.8,     287.0,     287.0,       1.8);
    ( 466242.3, 3770827.5,     287.0,     287.0,       1.8);
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                  ***        10/08/08
                                    ***                                                         ***        10:25:38
 **MODELOPTs:                                                                                              PAGE  11
 CONC                               FLAT   FLGPOL

                                  *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                   (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

                   METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2000   1  1  1
                                                       AND END DATE: 2000  12 31 24

              NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

                          *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                   (METERS/SEC)

                                    1.54,   3.09,   5.14,   8.23,  10.80,
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                  ***        10/08/08
                                    ***                                                         ***        10:25:38
 **MODELOPTs:                                                                                              PAGE  12
 CONC                               FLAT   FLGPOL

                                   *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   C:\Documents and Settings\Environmental Svcs\Desktop\Holt&Melros DPM\ONTNKX\ONTN   Met Version:  06341
   Profile file:   C:\Documents and Settings\Environmental Svcs\Desktop\Holt&Melros DPM\ONTNKX\ONTN
   Surface format: (3(I2,1X),I3,1X,I2,1X,F6.1,1X,3(F6.3,1X),2(F5.0,1X),F8.1,1X,F6.3,1X,2(F6.2,1X),F7.2,1X,F5.0,3(1X,F6.1))
   Profile format: (4(I2,1X),F6.1,1X,I1,1X,F5.0,1X,F7.2,1X,F7.2,1X,F6.1,1X,F7.2)
   Surface station no.:     72286                  Upper air station no.:     3190
                Name: UNKNOWN                                    Name: UNKNOWN
                Year:   2000                                     Year:   2000

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS    WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

```
 00 01 01   1 01   -2.8  0.065 -9.000 -9.000 -999.   38.      8.6  0.10   1.05   1.00    1.50  171.   10.0  280.9    2.0
 00 01 01   1 02   -7.2  0.130 -9.000 -9.000 -999.  108.     26.9  0.10   1.05   1.00    2.10  168.   10.0  280.4    2.0
 00 01 01   1 03 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10   1.05   1.00    0.00    0.   10.0  280.4    2.0
 00 01 01   1 04 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10   1.05   1.00    0.00    0.   10.0  280.9    2.0
 00 01 01   1 05 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10   1.05   1.00    0.00    0.   10.0  280.9    2.0
 00 01 01   1 06 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10   1.05   1.00    0.00    0.   10.0  280.9    2.0
 00 01 01   1 07 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10   1.05   1.00    0.00    0.   10.0  280.9    2.0
 00 01 01   1 08   -6.6  0.141 -9.000 -9.000 -999.  122.     37.3  0.10   1.05   0.53    2.10  183.   10.0  280.9    2.0
 00 01 01   1 09    2.8  0.062  0.122  0.007   22.   37.     -7.3  0.12   1.05   0.31    0.50  217.   10.0  281.4    2.0
 00 01 01   1 10   15.2 -9.000 -9.000 -9.000   71. -999. -99999.0  0.10   1.05   0.24    0.00    0.   10.0  282.0    2.0
 00 01 01   1 11   24.8 -9.000 -9.000 -9.000  128. -999. -99999.0  0.10   1.05   0.21    0.00    0.   10.0  285.9    2.0
 00 01 01   1 12   28.3 -9.000 -9.000 -9.000  240. -999. -99999.0  0.10   1.05   0.20    0.00    0.   10.0  284.2    2.0
 00 01 01   1 13   27.9  0.257  0.652  0.005  348.  299.    -53.3  0.11   1.05   0.20    2.60  253.   10.0  284.2    2.0
 00 01 01   1 14   52.2  0.228  0.940  0.005  557.  250.    -19.8  0.12   1.05   0.22    2.10  239.   10.0  284.2    2.0
 00 01 01   1 15   13.5  0.206  0.618  0.005  612.  216.    -57.0  0.11   1.05   0.25    2.10  262.   10.0  284.2    2.0
 00 01 01   1 16   10.1  0.288  0.573  0.005  652.  355.   -207.5  0.12   1.05   0.34    3.10  234.   10.0  284.2    2.0
 00 01 01   1 17  -11.3  0.195 -9.000 -9.000 -999.  201.     56.9  0.12   1.05   0.62    2.60  231.   10.0  284.2    2.0
 00 01 01   1 18  -16.3  0.299 -9.000 -9.000 -999.  376.    144.2  0.12   1.05   1.00    3.60  227.   10.0  284.2    2.0
 00 01 01   1 19  -10.7  0.197 -9.000 -9.000 -999.  205.     62.0  0.11   1.05   1.00    2.60  254.   10.0  283.1    2.0
 00 01 01   1 20  -13.6  0.249 -9.000 -9.000 -999.  285.     98.7  0.11   1.05   1.00    3.10  267.   10.0  282.0    2.0
 00 01 01   1 21   -7.5  0.136 -9.000 -9.000 -999.  121.     29.6  0.11   1.05   1.00    2.10  260.   10.0  282.0    2.0
 00 01 01   1 22   -2.8  0.065 -9.000 -9.000 -999.   40.      8.6  0.10   1.05   1.00    1.50  162.   10.0  282.0    2.0
 00 01 01   1 23  -10.8  0.196 -9.000 -9.000 -999.  200.     61.3  0.11   1.05   1.00    2.60  260.   10.0  280.9    2.0
 00 01 01   1 24   -7.5  0.137 -9.000 -9.000 -999.  117.     29.7  0.12   1.05   1.00    2.10  230.   10.0  280.9    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 00 01 01 01   10.0 1  171.    1.50   281.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                              ***        10/08/08
                                    ***                                                                     ***        10:25:38
 **MODELOPTs:                                                                                                          PAGE  13
 CONC                               FLAT   FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   1 YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):      SRC1    , SRC2    , SRC3    , SRC4    , SRC5    , SRC6    , SRC7    ,
         SRC8    , SRC9    , SRC10   , SRC12   , SRC13   , SRC14   , SRC15   , SRC16   , SRC17   , SRC18   , SRC19   , SRC20   ,
         SRC21   , SRC22   , SRC23   , SRC24   , SRC25   , SRC26   , SRC27   , SRC28   ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM10     IN MICROGRAMS/M**3                          **

      X-COORD (M)   Y-COORD (M)        CONC                         X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        466267.50    3769691.25   16644.57031                         466263.31    3769800.25    5873.02148
        466262.19    3769907.00    3660.41016                         466260.09    3770064.00    2332.25806
        466255.91    3770105.25    2127.17310                         466257.00    3770246.75    1637.28113
        466242.31    3770827.50     801.18542
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                              ***        10/08/08
                                    ***                                                                     ***        10:25:38
 **MODELOPTs:                                                                                                          PAGE  14
 CONC                               FLAT   FLGPOL

                             *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      SRC1    , SRC2    , SRC3    , SRC4    , SRC5    , SRC6    , SRC7    ,
         SRC8    , SRC9    , SRC10   , SRC12   , SRC13   , SRC14   , SRC15   , SRC16   , SRC17   , SRC18   , SRC19   , SRC20   ,
         SRC21   , SRC22   , SRC23   , SRC24   , SRC25   , SRC26   , SRC27   , SRC28   ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM10     IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       466267.50   3769691.25   37221.85547c (00101224)            466263.31   3769800.25   22380.71289c (00021524)
       466262.19   3769907.00   14515.81641c (00021524)            466260.09   3770064.00   10977.83203c (00021524)
       466255.91   3770105.25   10339.60645c (00021524)            466257.00   3770246.75    8380.52930c (00021524)
       466242.31   3770827.50    3859.85352c (00080724)
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                              ***        10/08/08
                                    ***                                                                     ***        10:25:38
 **MODELOPTs:                                                                                                          PAGE  15
 CONC                               FLAT   FLGPOL

                                             *** THE SUMMARY OF MAXIMUM ANNUAL (   1 YRS) RESULTS ***


                                        ** CONC OF PM10     IN MICROGRAMS/M**3                          **

                                                                                                 NETWORK
 GROUP ID                        AVERAGE CONC              RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)   OF TYPE  GRID-ID
```

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      1ST HIGHEST VALUE IS   16644.57031 AT (  466267.50,  3769691.25,    287.00,    287.00,      1.80)  DC
         2ND HIGHEST VALUE IS    5873.02148 AT (  466263.31,  3769800.25,    287.00,    287.00,      1.80)  DC
         3RD HIGHEST VALUE IS    3660.41016 AT (  466262.19,  3769907.00,    287.00,    287.00,      1.80)  DC
         4TH HIGHEST VALUE IS    2332.25806 AT (  466260.09,  3770064.00,    287.00,    287.00,      1.80)  DC
         5TH HIGHEST VALUE IS    2127.17310 AT (  466255.91,  3770105.25,    287.00,    287.00,      1.80)  DC
         6TH HIGHEST VALUE IS    1637.28113 AT (  466257.00,  3770246.75,    287.00,    287.00,      1.80)  DC
         7TH HIGHEST VALUE IS     801.18542 AT (  466242.31,  3770827.50,    287.00,    287.00,      1.80)  DC
         8TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,      0.00,      0.00)
         9TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,      0.00,      0.00)
        10TH HIGHEST VALUE IS       0.00000 AT (       0.00,        0.00,      0.00,      0.00,      0.00)


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                          ***        10/08/08
                                    ***                                                                 ***        10:25:38
 **MODELOPTs:                                                                                                      PAGE  16
 CONC                               FLAT   FLGPOL

                                                   *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                           ** CONC OF PM10     IN MICROGRAMS/M**3                          **

                                                         DATE                                                               NETWORK
GROUP ID                            AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)     OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH  1ST HIGH VALUE IS   37221.85547c ON 00101224: AT (  466267.50,  3769691.25,    287.00,    287.00,      1.80)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
1 *** AERMOD - VERSION 07026 ***    ***  WVSPA                                                          ***        10/08/08
                                    ***                                                                 ***        10:25:38
 **MODELOPTs:                                                                                                      PAGE  17
 CONC                               FLAT   FLGPOL


 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           0 Warning Message(s)
 A Total of        1908 Informational Message(s)

 A Total of        1908 Calm Hours Identified

 A Total of           0 Missing Hours Identified (  0.00 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

Greenhouse Gas Assessment For The
WEST VALLEY SPECIFIC PLAN AMENDMENT
CITY OF COLTON

Prepared For:

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September 26, 2008
Report #08-138

Table Of Contents

1.0 Background Information

1.1 Project Description

The West Valley Specific Plan Amendment (WVSPA) project consists of revising and amending a portion of the West Subarea of the existing West Valley Specific Plan (WVSP), while the East Subareas will remain unaffected by this amendment. Of the West Subarea, approximately 373 acres of the total 476 acres is affected by this amendment. Under the WVSPA, a variety of land uses were planned, including a mix of residential and non-residential uses. Residential uses will include both single family and multiple family dwelling units. Non-residential uses will consist of retail uses, including a proposed hotel, a variety of office/business park uses, as well as a school site and open space/parks. The vicinity map is presented in Exhibit 1. The site plan is illustrated in Exhibit 2.

1.2 Greenhouse Gases and Climate Change

The Earth's climate has always been in the process of changing, due to many different natural factors. These factors have included changes in the Earth's orbit, volcanic eruptions, and varying amounts of energy released from the sun. Differences such as these have caused fluctuations in the temperature of the climate, ranging from ice ages to long periods of warmth. However, since the late 18^{th} century, humans have had an increasing impact of the rate of climate change, beginning with the Industrial Revolution.

Many human activities have augmented the amount of "greenhouse gases" ("GHGs") being released into our atmosphere, specifically the burning of fossil fuels, such as coal and oil, and deforestation. The gases increase the efficiency of the greenhouse effect, which is the process of trapping and recycling energy (in the form of heat) that the Earth emits naturally, resulting in higher temperatures worldwide. The Intergovernmental Panel on Climate Change stated in February 2007 that warming is unequivocal, expressing very high confidence (expressed as a nine out of ten chance of being correct) that the net effect of human activities since 1750 has been one of warming. According to NOAA and NASA data, the average surface temperature of the Earth has increased by about 1.2 to 1.4 ºF since 1900. The warmest global average temperatures in human record have all occurred within the past 15 years, with the warmest two years being 1998 and 2005. [EPA, 2007, epa.gov/climatechange/basicinfo.html].

This process of heating is often referred to as 'global warming,' although the National Academy of Sciences prefers the terms 'climate change' as an umbrella phrase which includes global warming as well as other environmental changes, in addition to the increasing temperatures. Some of these effects include changes to rainfall, wind, and current patterns, as well as snow and ice cover, and sea level.

Depending on which GHG emissions scenario is used, climate models predict that the Earth's average temperature could rise anywhere between 2.5 to 10.4 ºF from 1990 to the end of this century. The degree of change is influenced by the assumed amount of GHG emissions, and how quickly atmospheric GHG levels are stabilized. At this point, however, the climate change

Exhibit 1 Vicinity Map

Exhibit 2 Site Plan

models are not capable of predicting local impacts, but rather, can only predict global trends. [EPA, 2007, epa.gov/climatechange/basicinfo.html].

Global GHG emissions are measured in million metric tons of carbon dioxide equivalent ("MMT CO_2EQ") units. A metric ton is approximately 2,205 lbs. Some GHGs emitted into the atmosphere are naturally occurring, while others are caused solely by human activities. The principal GHGs that enter the atmosphere because of human activities are:

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), agriculture, irrigation, and deforestation, as well as the manufacturing of cement.

- **Methane (CH_4)** is emitted through the production and transportation of coal, natural gas, and oil, as well as from livestock. Other agricultural activities influence methane emissions as well as the decay of waste in landfills.

- **Nitrous oxide (N_2O)** is released most often during the burning of fuel at high temperatures. This greenhouse gas is caused mostly by motor vehicles, which also include non-road vehicles, such as those used for agriculture.

- **Fluorinated Gases** are emitted primarily from industrial sources, which often include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Though they are often released in smaller quantities, they are referred to as High Global Warming Potential Gases because of their warming forcing power. Fluorinated gases are often used as substitutes for ozone depleting substances.

These gases have different potentials for trapping heat in the atmosphere, called global warming potential ("GWP"). For example, one pound of methane has 21 times more heat capturing potential than one pound of carbon dioxide. When dealing with an array of emissions, the gases are converted to carbon dioxide equivalents for comparison purposes. The GWPs for common greenhouse gases are shown in Table 1.

Table 1
Global Warming Potentials (GWP)

Gas	Global Warming Potential
Carbon Dioxide	1
Methane	21
Nitrous Oxide	310
HFC-23	11,700
HFC-134a	1,300
HFC-152a	140
PFC: Tetrafluoromethane (CF_4)	6,500
PFC: Hexafluoroethane (C_2F_6)	9,200
Sulfur Hexafluoride (SF_6)	23,900

Source: EPA 2006. Non CO2 Gases Economic Analysis and inventory. (http://www.epa.gov/nonco2/econ-inv/table.html), December 2006

1.3 Emission Inventories

To put perspective on the emissions generated by a project and to better understand the sources of GHGs, it is important to look at emission inventories. The United Nations has taken the lead in quantifying GHG emissions and compiling the literature on climate change. The United Nations estimate for CO_2 equivalents for the world and for the top ten CO_2 producing countries is presented in Table 2.

Table 2
Top Ten CO2 Producing Nations Between 1990-2004
(Emissions in Million Metric Tons (MMT) CO_2EQ)

Country	Emissions	Percent of Global
1. United States	7067.57	25.3%
2. China	4057.31	14.5%
3. Japan	1355.17	4.9%
4. India	1214.25	4.3%
5. Germany	1015.27	3.6%
6. Canada	758.07	2.7%
7. United Kingdom	665.33	2.4%
8. Brazil	658.98	2.4%
9. Italy	582.52	2.1%
10. France	562.63	2.0%
Total Global	**27,940.70**	**100.0%**

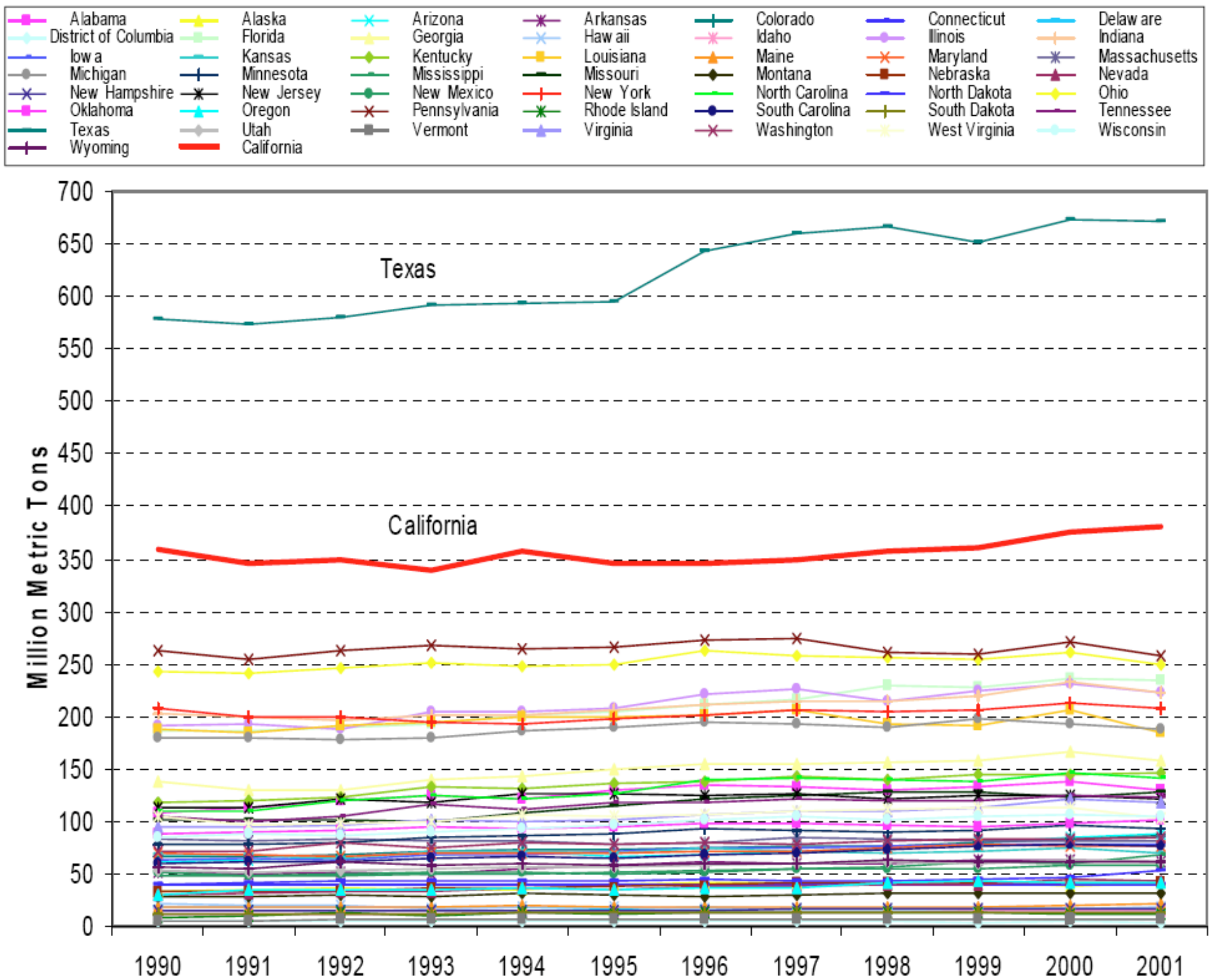
Source: United Nations Framework Convention on Climate Change, "National Greenhouse Gas Inventory Data for the Period 1990–2004 and Status of Reporting," October 19, 2006.

Global CO_2 emissions totaled about 27,941 MMT CO_2EQ in 2004. The United States released 7,068 MMT CO_2EQ in 2004, which is approximately 25% of the earth's total emissions.

Within the United States, California has the second highest level of GHG production with Texas having the highest. In 2001, the burning of fossil fuels produced over 81% of total GHG emissions.. In relation to other states, California is the second highest producer of CO_2 by fossil fuels, as shown in Exhibit 2.

Exhibit 3

CO_2 Production Through Fossil Fuels by State



[Source: California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004," December 2006.]

1.4 Sources of Greenhouse Gases in California

The California Energy Commission ("CEC") categorizes GHG generation by source into five broad categories. The categories are:

- **Transportation** includes the combustion of gasoline and diesel in automobiles and trucks. Transportation also includes jet fuel consumption.

- **Agriculture and forestry** GHG emissions are composed mostly of nitrous oxide from agricultural soil management, CO_2 from forestry practice changes, methane from enteric fermentation, and methane and nitrous oxide from manure management.

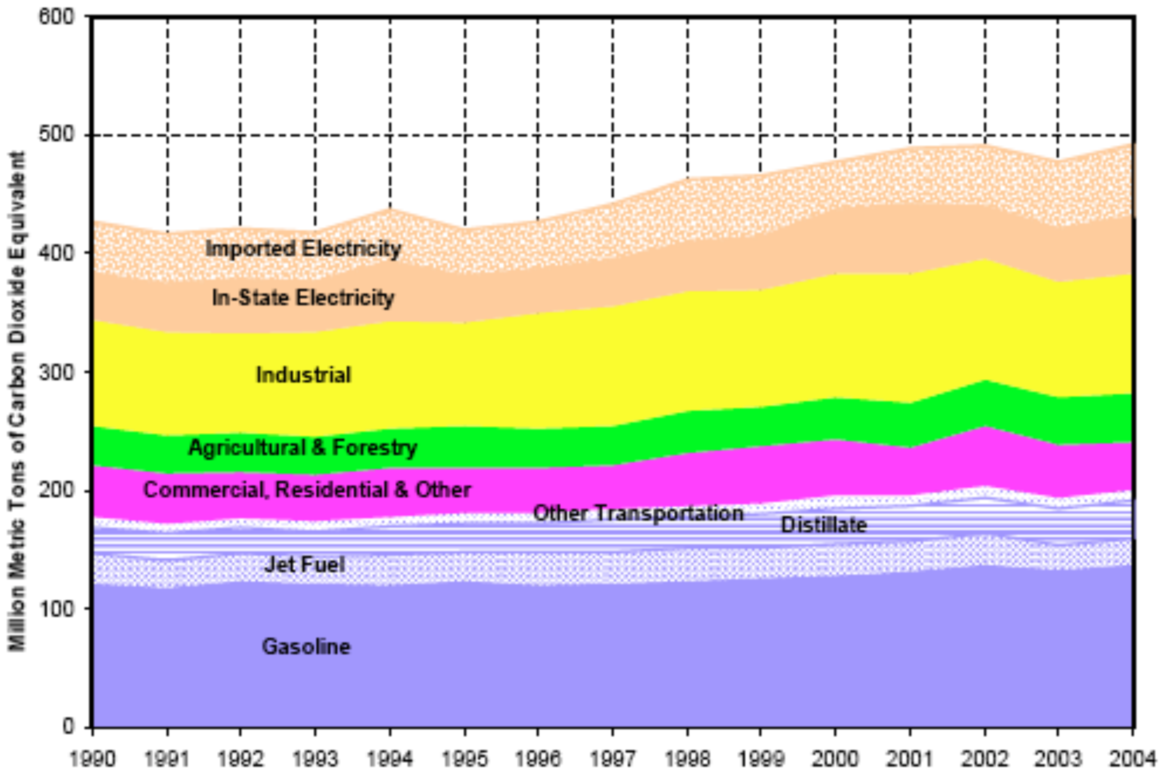
- **Commercial and residential** uses generate GHG emissions primarily from the combustion of natural gas for space and water heating.

- **Industrial** GHG emissions are produced from many industrial activities. Major contributors include oil and natural gas extraction; crude oil refining; food processing; stone, clay, glass, and cement manufacturing; chemical manufacturing; and cement production. Wastewater treatment plants are also significant contributors to this category.

- **Electric generation** includes both emissions from power plants in California as well as power plants located outside of the state that supply electricity to the state.

The amount of GHGs released from each of these categories in California from 1990 to 2004 is shown in Exhibit 3.

Exhibit 4
CA Greenhouse Emissions by Sector (In MMT CO_2EQ)



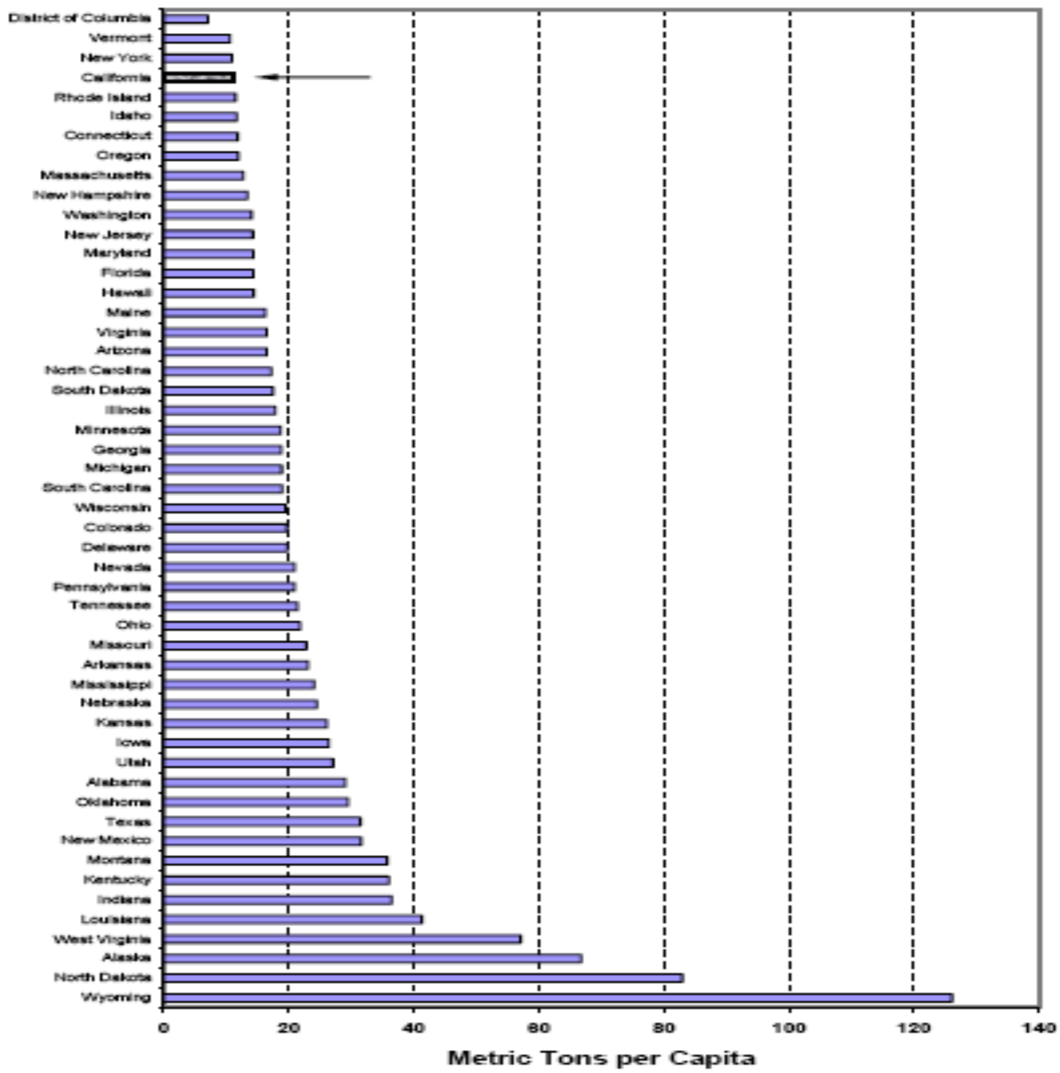
[Source: California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004," December 2006]

Examination of Exhibit 3 indicates that most of California's GHGs are emitted by transportation sources, such as automobiles, trucks, and airplanes. (The transportation sector is labeled as gasoline, jet fuel, distillate, and other transportation in Exhibit 3.) The electric generation sector is the second largest GHG contributor in the state.

While California has the second highest rate of GHG production in the nation, it should also be noted that California has one of the lowest per capita rates of GHG emissions, as shown in Exhibit 4. According to Exhibit 4, California had the fourth lowest per capita rate of CO_2 production from fossil fuels in the United States. Wyoming produced the most CO_2 per capita, while the District of Columbia produced lowest.

Exhibit 5

CO_2 Emissions From Fossil Fuels Per Capita (2001)



[Source: California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004," December 2006]

2.0 Regulatory Framework

Federal Plans, Policies, Regulations, and Laws. The federal government began studying the phenomenon of global warming as early as 1978 with the National Climate Protection Act, 92 Stat. 601, which required the President to establish a program to "assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications." The 1987 Global Climate Protection Act, Title XI of Pub. L. 100-204, directed the U.S. EPA to propose a "coordinated national policy on global climate change," and ordered the Secretary of State to work "through the channels of multilateral diplomacy" to coordinate efforts to address global warming. Further, in 1992, the United States ratified a nonbinding agreement among 154 nations to reduce atmospheric GHGs.

More recently, in *Massachusetts v. EPA* (April 2, 2007), the United State Supreme Court held that GHGs fall within the Clean Air Act's definition of an "air pollutant," and directed the EPA to consider whether GHGs are causing climate change. If so, the EPA must regulate GHG emissions from automobiles under the Clean Air Act. As of this writing, USEPA has yet to begin rulemaking proceedings to consider whether human greenhouse gases are contributing to climate change.

In addition, Congress has increased the corporate average fuel economy (CAFE) of the U.S. automotive fleet. In December 2007, President Bush signed a bill raising the minimum average miles per gallon for cars, sport utility vehicles, and light trucks to 35 miles per gallon by 2020. This increase in CAFE standard will create a substantial reduction in GHG emissions from automobiles, which is the largest single emitting GHG sector in California.

As of this writing, however, there are no adopted federal plans, policies, regulations or laws setting a mandatory limit on GHG emissions. Further, the EPA has not finalized its evaluation in the wake of *Massachusetts v. EPA*.

California State Plans, Policies, Regulations, and Laws. In the past year, California has distinguished itself as a national leader in efforts to address global climate change by enacting several major pieces of legislation, engaging in multi-national and multi-state collaborative efforts, and preparing a wealth of information on the impacts associated with global climate change.

Assembly Bill 32, the California Global Warming Solutions Act of 2006 (Health and Safety Code § 38500 et seq.). In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Global Warming Solutions Act of 2006. In general, AB 32 directs the California Air Resources Board ("CARB") to do the following:

- On or before June 30, 2007, CARB shall publish a list of discrete early action measures for reducing GHG emissions that can be implemented by January 1, 2010;

- By January 1, 2008, establish the statewide GHG emissions cap for 2020, based on CARB's calculation of statewide GHG emissions in 1990 (an approximately 25 percent reduction in existing statewide GHG emissions);

- Also by January 1, 2008, adopt mandatory reporting rules for GHG emissions sources that "contribute the most to statewide emissions" (Health & Safety Code § 38530);

- By January 1, 2009, adopt a scoping plan that indicates how GHG emission reductions will be achieved from significant GHG sources through regulations, market mechanisms, and other strategies;

- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures;

- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020; and

- On January 1, 2012, CARB's GHG emissions regulations become operative.

- On January 1, 2020, achieve 1990 levels of GHG emissions.

In a December 2006 report, CARB estimated that California emitted between 425 and 468 million metric tons of CO_2 in 1990. In December 2007, ARB finalized 1990 emissions at 427 million metric tons of CO2.

AB 32 takes into account the relative contribution of each source or source category to protect adverse impacts on small businesses and others by requiring CARB to recommend a *de minimis* threshold of GHG emissions below which emissions reduction requirements would not apply. AB 32 also allows the Governor to adjust the deadlines mentioned above for individual regulations or the entire state to the earliest feasible date in the event of extraordinary circumstances, catastrophic events, or threat of significant economic harm.

ARB "Early Action Measures" (June 30, 2007). On June 21, 2007, CARB approved its early action measures to address climate change, as required by AB 32. The three measures include: (1) a low carbon fuel standard, which will reduce the carbon-intensity in California fuels, thereby reducing total CO_2 emissions; (2) reduction of refrigerant losses from motor vehicle air conditioning system maintenance through the restriction of "do-it-yourself" automotive refrigerants; and (3) increased CH_4 capture from landfills through the required implementation of state-of-the-art capture technologies.

ARB Mandatory Reporting Regulations (December 2008). Under AB 32, ARB propounded regulations to govern mandatory greenhouse gas emissions reporting for certain sectors of the economy, most dealing with approximately 94 percent of the industrial an commercial stationary sources of emissions. Regulated entities include electricity generating facilities, electricity retail providers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 metric tons of CO2 from stationary source combustion.

Senate Bill 97 (2007). By July 1, 2009, the Governor's Office of Planning and Research (OPR) is directed to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by the California Environmental Quality Act. The Resources Agency is required to certify and adopt these guidelines by January 1, 2010. OPR is required to periodically update these guidelines as ARB implements AB 32. In addition, SB 97 states that the failure to include a discussion of greenhouse gas emissions in any CEQA document for a project funded under the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or projects funded under the Disaster Preparedness and Flood Prevention Bond Act of 2006 shall not be a cause of action under CEQA. This last provision will be repealed on January 1, 2010.

Executive Order S-01-07 (2007). Executive Order S-01-07 calls for a reduction in the carbon intensity of California's transportation fuels by at least 10 percent by 2020. As noted above, the low-carbon fuel standard ("LCFS") was adopted by CARB as one of its three "early action measures" on June 21, 2007.

Senate Bill 1368 (2006) (Public Utilities Code §§ 8340-41). SB 1368 required the California Public Utilities Commission ("PUC") to establish a "GHG emission performance standard" by February 1, 2007, for all electricity providers under its jurisdiction, including the state's three largest privately-owned utilities. Pub. Res. Code § 8341(d)(1). These utilities provide approximately 30 percent of the state's electric power. After the PUC acted, the CEC adopted a performance standard "consistent with" the PUC performance standard and applied it to local publicly-owned utilities on May 23, 2007 (over one month ahead of its June 30, 2007 deadline). Cal. Pub. Res. Code § 8341(e)(1). However, the California Office of Administrative Law ("OAL") found four alleged flaws in the CEC's rulemaking. The CEC overcame these alleged flaws and adopted reformulating regulations in August 2007.

Senate Bill 107 (2006) . Senate Bill 107 ("SB 107") requires investor-owned utilities such as Pacific Gas and Electric, Southern California Edison and San Diego Gas and Electric, to generate 20 percent of their electricity from renewable sources by 2010. Previously, state law required that this target be achieved by 2017.

Western Regional Climate Action Initiative (Arizona, California, New Mexico, Oregon, Utah, Washington)(2007). Acknowledging that the western states already experience a hotter, drier climate, the Governors of the foregoing states have committed to three time-sensitive actions: (1) by August 26, 2007, to set a regional goal to reduce emissions from the states collectively, consistent with state-by state goals; (2) by August 26, 2008, to develop "a design for a regional market-based multi-sector mechanism, such as a load-based cap and trade program, to achieve the regional GHG reduction goal;" and (3) to participate in a multi-state GHG registry "to enable tracking, management, and crediting for entities that reduce GHG emissions, consistent with state GHG reporting mechanisms and requirements."

Executive Order S-3-05 (June 1, 2005). Executive Order S-3-05 calls for a reduction in GHG emissions to 2000 levels by 2010; 1990 levels by 2020; and for an 80 percent reduction in GHG emissions below 1990 levels by 2050. It also directs the California Environmental Protection Agency ("CalEPA") to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy.

California's Renewable Energy Portfolio Standard Program (2005). In 2002, California established its Renewable Energy Portfolio Standard Program, which originally included a goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. The state's most recent 2005 Energy Action Plan raises the renewable energy goal from 20 percent by 2017, to 33 percent by 2020.

Title 24, Part 6, California Code of Regulations (2005). In 2005, California adopted new energy efficiency standards for residential and nonresidential buildings in order to reduce California's energy consumption. This program has been partially responsible for keeping California's per capita energy use approximately flat over the past 30 years.

Assembly Bill 1493 (2002) (Health and Safety Code § 43018.5). Assembly Bill 1493 ("AB 1493") required CARB to develop and adopt the nation's first GHG emission standards for automobiles. Not only have litigants challenged their legality in federal court, but also USEPA denied California's request for a Clean Air Act waiver to implement its regulations. As of this writing, California and other states who seek to adopt California's greenhouse gas emissions standards for automobiles are challenging USEPA's denial in federal court.

Climate Action Registry (2001). California Senate Bills 1771 and 527 created the structure of the California Climate Action Registry ("Registry"), and former Governor Gray Davis signed the final version of the Registry's enabling legislation into law on October 13, 2001. These bills establish the Registry as a non-profit entity to help companies and organizations establish GHG emissions baselines against which future GHG emission reduction requirements could be applied. Using any year from 1990 forward as a base year, participants can record their annual GHG emissions with the Registry. In return for this voluntary action, the State of California promises to offer its "best efforts" to ensure that participants receive consideration for their early action if they are subject to any future state, federal, or international emissions regulatory scheme.

South Coast Air Quality Management District Plans, Policies, Regulations and Laws. The South Coast Air Quality Management District ("SCAQMD") adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" in April 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- Phase out the use and corresponding emissions of chlorofluorocarbons (CFCs), methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- Phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons (HCFCs) by the year 2000;
- Develop recycling regulations for HCFCs (e.g., SCAQMD Rules 1411 and 1415);
- Develop an emissions inventory and control strategy for methyl bromide; and,
- Support the adoption of a California GHG emission reduction goal.

The legislative and regulatory activity detailed above is expected to require significant development and implementation of energy efficient technologies and shifting of energy production to renewable sources.

City of Colton Plans, Policies, Regulations, and Laws.
The City of Colton does not have any plans, policies, regulations, or laws addressing climate change at this time.

3.0 Significance Thresholds

There are currently no published standards or thresholds of significance for measuring the impact of GHG emission generated by a project. Neither CARB nor the South Coast Air Quality Management District have issued recommendations, methodologies, or significance thresholds for evaluating projects under CEQA law. CEQA Guidelines §15064.7 indicates only that, "each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects."

It may be asserted that because there are no published thresholds of significance, a Lead Agency is relieved of the threshold determination. This supports a Lead Agency in finding that a determination of significance for GHG impacts is speculative. In *Laurel Heights Improvements Association v. Regents* ([1993] 6 Cal.App.4th 1112, 1137), the Court upheld the conclusion in the EIR that potential cumulative impacts of toxic air emissions are too speculative based on the lack of accepted methodologies or standards and based on CEQA Guideline §15145.

On June 19, 2007 the State of California Attorney General Edmund G. Brown Jr., released comments on the Draft EIR for Coyote Valley Specific Plan. The Specific Plan represents a larger new community outside of San Jose that may house up to 80,000 residents. A GHG analysis was prepared for the project that concluded that the project by itself did not constitute a significant impact. The analysis apparently did not address cumulative impacts. The Attorney General agreed that the project will not have a significant impact on climate change on its own, but recommended that the cumulative impact of the project must be considered. The Attorney General also recommended that if a cumulative impact was found then mitigation measures must be considered. The Attorney General acknowledged that the City, as the Lead Agency, makes the final determination whether an impact will be significant or not.

4.0 Estimate of Project Greenhouse Gas Emissions

The primary source of GHG emissions generated by the proposed project will be from motor vehicles. Other emissions from the project will be generated from the combustion of natural gas for space and water heating, as well as off-site GHG emissions from the generation of electricity consumed by the project.

To calculate the emissions produced from the project, the daily vehicle trips were utilized. The project's land uses and trip generation were obtained from the traffic study titled "West Valley Specific Plan Traffic Impact Analysis" prepared by Kunzman Associates, July 2008. Kunzman Associates determined the daily trip generation to be 52,388 trips per day. The SCAQMD's "CEQA Handbook" was used to determine usage rates for natural gas and electricity. CARB's EMFAC2007 emissions database provided the appropriate emission rate and vehicle trip length for each category of vehicle. Typical emissions rates for natural gas combustion and electric generation were determined by the U.S. EPA's "Compilation of Air Pollutant Emission Factors (AP-42)." The project opening year is anticipated to be 2012. The emissions are projected by category for year 2012 and are presented in Table 3. More specific data utilized in calculating the emissions from the project are provided in the appendix.

The most notable greenhouse gases (GHG) are CH_4 and CO_2. N_2O is another greenhouse gas. However, emission rates for most sources of N_2O are not available and they appear to be minuscule (account for only 0.1% or less of the greenhouse gas emissions for this type of project). As a result, N_2O emissions are not included in this report.

To determine the total project emissions, the source emissions were calculated by multiplying the methane and CO_2 emissions in pounds per day by GWP constants of 24 and 1, respectively. The CO_2 equivalent is the sum of these CH_4 and CO_2 emissions. The CO_2 equivalents were then converted to metric tons (MT) per day.

Table 3
Total Projected Project Emissions – Year 2012
(Pounds Per Day, except as noted)

Source	CH4 CO2EQ	CO2	CO2EQ
Vehicular Trips	480	394,742	395,222
Natural Gas Consumption	0.8	40,844	40,861
Electrical Generation	7.7	98,187	98,348
Total Project Emissions	**488**	**533,773**	**534,431**
Total Emissions in Metric Tons Per Day (MT)	**0.2**	**242.1**	**242.4**

Table 3 shows that 74% of the GHG emissions (as expressed in CO_2 equivalents) generated by the project are projected to be from motor vehicles. Electricity usage is the next biggest contributor and accounts for 18% of the GHG emissions.

The GHG emissions were also projected for future years beyond 2012 and are presented in Table 4. The GHG emissions rates for motor vehicles are not projected to change significantly in upcoming years (Table 4). This is likely a conservative estimate as newer and more fuel efficient models of automobiles are released in the coming years. The analysis indicates that there will be a steady increase in emissions between 2012 and 2040. The increase in the emissions are directly proportional to the increase in the projected EMFAC2007 emission rates. Neither the U.S. EPA nor CARB currently regulate CO_2 emissions.

Table 4
Project Trend Of GHG Emissions
(metric tons per year of CO_2 equivalents)

Year	MT CO_2EQ
2012	88,481
2020	89,852
2030	93,318
2040	99,586

Table 5 compares the GHG emissions from the project to total emissions in California, the United States, and globally. This comparison shows that the project represents a very small fraction of total GHG emissions.

Table 5
Comparison of Project Emissions With Global Emissions

	MMT CO_2EQ	Year
Project Emissions	0.088	2012
State of California	471	2004
United States	7,068	2004
World	27,941	2004

The emissions generated by the project will contribute a miniscule amount to the overall climate change issue. By way of comparison, the global data from the United Nations indicates that the project would contribute less than 0.0003% to the GHG burden for the planet. Even when compared to California's GHG emissions, the proposed project's individual contribution is insignificant (approximately 0.019% of 2004 California emissions). It should be noted that the project emissions would be offset by demolition of the existing land uses. For the purposes of this analysis, global climate change impacts will be considered at the cumulative level to consider whether any potential increase in GHG emissions that may be associated with the project over the current physical baseline, should be considered significant on a cumulative basis.

According to the comment letter issued by the California Attorney General, Jerry Brown, on the Coyote Valley Specific Plan, cumulative impacts should be considered. The letter states, "Global warming is a quintessentially cumulative impact, caused by the added effects of countless individual projects at the local, regional, state, national, and international level." If this project is considered in more of the regional context, if must be asked whether the project will in fact, generate new emissions or whether it actually results in a more efficient regional land use plan. The traffic study does address the regional context of the project in regards to general background regional growth and the use of the SCAG 2030 Model. The trip data in the traffic study for the project were extracted from this model.

The Attorney General letter continues with another benchmark for causing a significant impact. The Attorney General states, "Where a project's direct and indirect GHG-related effects, considered in the context of the existing and projected cumulative effects, may interfere with California's ability to achieve its GHG reduction requirements [as required by AB 32], the project's global warming-related impacts must be considered cumulatively significant." No regulations have yet been promulgated as a result of AB 32. So far, CARB's indication is that the first wave of regulations will address emissions from major industrial and agricultural sources. CARB is also very likely to promote requirements for motor vehicles, via new emission controls and increased fuel economy that would significantly lower GHG emissions in future years. CARB is not considering restrictions on growth or new development. Since this project would, of course, comply with any regulations promulgated by the CARB and since CARB is not putting any restrictions on growth, this project cannot be seen as interfering with "California's ability to achieve its GHG reduction requirements." Therefore, no significant cumulative impacts are anticipated.

5.0 Measures/Actions For Consideration

No mitigation measures are required since no impacts have been identified. However, a list potential measures and programs is provided below, in case the decision makers reverse the finding and decide that a significant cumulative impact will occur. The list presented below is taken for the most part from the Attorney General's letter. The letter contains a long list of potential mitigation measures that would cover a variety of projects. Those measures that have some relevance to this project have been extracted from that list and are presented below.

Transportation

- Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where signals are installed, require the use of Light Emitting Diode (LED) traffic lights.
- Promote ride sharing programs *e.g.*, by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing, and designating adequate passenger loading and unloading and waiting areas.
- Incorporate bicycle lanes into street systems in regional transportation plans, new subdivisions, and large developments.

Energy Efficiency and Renewable Energy

- Require energy efficient design for buildings. This may include strengthening local building codes for new construction and renovation to require a higher level of energy efficiency.
- Require the use of energy efficient appliances and office equipment.
- Require that projects use energy efficient lighting. (Fluorescent lighting uses approximately 75% less energy than incandescent lighting to deliver the same amount of light.)

Land Use Measures

- Incorporate public transit into project design.
- Preserve and create open space and parks. Preserve existing trees and require the planning of replacement trees for those removed in construction.

- Impose measures to address the "urban heat island" effect by *e.g.*, requiring light-colored and reflective roofing materials and paint; light-colored roads and parking lots; shade trees in parking lots; and shade trees on the south and west sides of new or renovated buildings.

6.0 References

Brown Jr., Edmund G., Attorney General, State of California, "Comments on Draft Environmental Impact Report for Coyote Canyon Specific Plan," June 19, 2007.

California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004," December 2006.

California Air Resource Board, "California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit", public released on November 16, 2007.

California Energy Commission, "The Role of Land Use in Meeting California's Energy and Climate Change Goals," August 2007.

Cervero, Robert, et al., Journal of the American Planning Association, "Which Reduces Vehicle Miles Traveled More: Jobs-Housing Balance or Retail Housing Mixing?" (Autumn 2006).

Hendrix, Michael, et al., "Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents," Association of Environmental Professionals, Revised Draft, April 27, 2007.

Final Environmental Impact Report (FEIR) Village at Playa Vista, 2004 and "Village at Playa Vista Draft EIR", August 2003.

Southern California Association of Governments, The New Economy and Jobs/Housing Balance in Southern California, April 2001.

State of California, "Climate Change Portal," http://www.climatechange.ca.gov/index.html.

United Nations Statistics Division, "Environment Indicators: Greenhouse Gas Emissions," http://unstats.un.org/unsd/ENVIRONMENT/air_greenhouse_emissions.htm.

United Nations Framework Convention on Climate Change, "National Greenhouse Gas Inventory Data for the Period 1990–2004 and Status of Reporting," October 19, 2006.

U.S. Environmental Protection Agency, "The U.S. Inventory of Greenhouse Gas Emissions and Sinks: Fast Facts," April 2007.

U.S. Environmental Protection Agency, "Climate Change," http://epa.gov/climatechange/index.html.

U.S. Environmental Protection Agency, "AP 42, Fifth Edition Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources," http://www.epa.gov/ttn/chief/ap42/.

U.S. Environmental Protection Agency, "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2005," April 15, 2007.

U.S. Environmental Protection Agency, 2006. "Non CO2 Gases Economic Analysis and inventory. Global Warming Potentials and Atmospheric Lifetimes "
http://epa/gov/nonco2/econ-inv/table.html.

Appendix

• MESTRE GREVE ASSOCIATES PROJECT EMISSIONS WORKSHEET •

v. 07.07

Project: ***WVSPA***
Study Year: ***2012***
APCD: ***SCAQMD***

1. VEHICULAR EMISSIONS

Emission Factor Source: EMFAC2007

Number of Trips Per Day = ***52,388*** Composite Mix

	CH4	CO2	CO2E
Composite Mix			
Factors (lbs/trip)	0.00044	7.535	
Emissions (Lb/Dy)	22.9	394742.2	
Subtotal	22.86	394742.2	
Global Warming Potential (GWP)	21	1	
Emissions (Eq. Lb/Dy)	480.0	394,742.2	395,222.2
Emissions (MT/YR)	**79.5**	**65,354**	**65,433**

2. ON SITE EMISSIONS DUE TO NATURAL GAS COMBUSTION

Source: 1993 SCAQMD CEQA Handbook

Unit Type	Gas ft³/DU/Mo.	DU	Gas ft³/day	
Single Fam.	6665	***0***	0	
Mult. Fam. <=4	4105	***1,246***	167,699	
Mult. Fam. >=5	3918	***0***	0	
	ft³/ft²/Mo.	ft²	*167,699*	*Subtotal for Residential*
Office/Comm. Retail	2	***1,784,893***	117,042	
Elementary School	2.9	***174,900***	16,630	
Hotel	4.8	***247,800***	38,998	
	ft³/Customer/Mo.	Customers/Mo.	*172,670*	*Subtotal for Retail/Commercial*
Industrial	2936.6	***0***	0	
			0	*Subtotal for Industrial*
			340,369	**Total Gas Usage/Day**
	CH4	CO2	CO2E	Emission Factor Source: EPA AP-42 Table 1.4.3
Factor (lbs/10^6 ft³)	2.3	120,000.0		
Emissions (Lb/Dy)	0.8	40,844.3	40,860.8	
Emissions (MT/YR)	**0.1**	**6,762**	**6,762**	

3. OFF SITE EMISSIONS DUE ELECTRICAL GENERATION

Source: 1993 SCAQMD CEQA Handbook

Unit Type	SCE KWH/Unit/Yr	LADWP KWH/Unit/Yr	Number of Units or Ft2	Electrical Use (KWH/Day)	
Residential	6081	5172	***1,246***	20,759	
	KWH/Ft2/Yr.	KWH/Ft2/Yr.			
Commercial	8.8	17.1	***132,313***	3,190	
Restaurant	47.3	47.6	***0***	0	
Office/Retail	11.8	15.3	***1,652,580***	53,426	
Food Store	51.4	55.2	***0***	0	
Warehouse	3.4	5.3	***0***	0	
Elementary School	6.3	5.5	***174,900***	3,019	
College	11.6	11.5	***0***	0	
Hospital	17.9	25.5	***0***	0	
Hotel/Motel	6.8	13.1	***247,800***	4,617	
Miscellaneous	8.8	12.2	***0***	0	
		Total (Ft2)	2,207,593	85,010	Total

Contaminant	CH4	CO2	CO2E	Emission Factor Source: EPA AP-42 Table 3.1-2a
Factor (lbs/MMBtu)	0.0086	110		
Factor (lbs/MWH)	0.0903	1155		1MW=10.5MMBtu/hr
Emis. (Lb/Dy)	7.7	98,186.5	98347.7	
Emissions (MT/YR)	**1.3**	**16,255.9**	**16,257.1**	

***TOTAL PROJECT EMISSIONS ***

	CH4	CO2	CO2E
lbs/day	488.4	533,773.0	534,430.6
Metric Tons/Day	0.22	242.12	242.41
Emissions (MT/YR)	**80.9**	**88,372**	**88,481**

	Pollutant Emissions (lbs/day)			
Source	**CH4COEQ**	**CO2**	**CO2EQ**	**% of total**
2012				
Vehicular Trips	480	394,742	395,222	74%
Natural Gas Consumption	0.8	40,844	40,861	8%
Electrical Usage	7.7	98,187	98,348	18%
Total Emissions (lbs/day)	**488**	**533,773**	**534,431**	
Total Emissions (metric tons/day)	**0.2**	**242.1**	**242.4**	

• MESTRE GREVE ASSOCIATES PROJECT EMISSIONS WORKSHEET •

v. 07.07

Project: ***WVSPA***
Study Year: ***2020***
APCD: ***SCAQMD***

1. VEHICULAR EMISSIONS

Emission Factor Source: EMFAC2007

Number of Trips Per Day = ***52,388*** Composite Mix

	CH_4	CO_2	CO2E
Composite Mix			
Factors (lbs/trip)	0.00025	7.697	
Emissions (Lb/Dy)	13.2	403229.4	
Subtotal	13.18	403229.4	
Global Warming Potential (GWP)	21	1	
Emissions (Eq. Lb/Dy)	276.7	403,229.4	403,506.2
Emissions (MT/YR)	**45.8**	**66,759**	**66,805**

2. ON SITE EMISSIONS DUE TO NATURAL GAS COMBUSTION

Source: 1993 SCAQMD CEQA Handbook

Unit Type	Gas ft³/DU/Mo.	DU	Gas ft³/day	
Single Fam.	6665	***0***	0	
Mult. Fam. <=4	4105	***1,246***	167,699	
Mult. Fam. >=5	3918	***0***	0	
	ft³/ft²/Mo.	ft²	*167,699*	*Subtotal for Residential*
Office/Comm. Retail	2	***1,784,893***	117,042	
Elementary School	2.9	***174,900***	16,630	
Hotel	4.8	***247,800***	38,998	
	ft³/Customer/Mo.	Customers/Mo.	*172,670*	*Subtotal for Retail/Commercial*
Industrial	2936.6	***0***	0	
			0	*Subtotal for Industrial*
			340,369	**Total Gas Usage/Day**
	CH_4	CO_2	CO2E	Emission Factor Source: EPA AP-42 Table 1.4.3
Factor (lbs/10^6 ft³)	2.3	120,000.0		
Emissions (Lb/Dy)	0.8	40,844.3	40,860.8	
Emissions (MT/YR)	**0.1**	**6,762**	**6,762**	

3. OFF SITE EMISSIONS DUE ELECTRICAL GENERATION

Source: 1993 SCAQMD CEQA Handbook

Unit Type	SCE KWH/Unit/Yr	LADWP KWH/Unit/Yr	Number of Units or Ft2	Electrical Use (KWH/Day)	
Residential	6081	5172	***1,246***	20,759	
	KWH/Ft2/Yr.	KWH/Ft2/Yr.			
Commercial	8.8	17.1	***132,313***	3,190	
Restaurant	47.3	47.6	***0***	0	
Office/Retail	11.8	15.3	***1,652,580***	53,426	
Food Store	51.4	55.2	***0***	0	
Warehouse	3.4	5.3	***0***	0	
Elementary School	6.3	5.5	***174,900***	3,019	
College	11.6	11.5	***0***	0	
Hospital	17.9	25.5	***0***	0	
Hotel/Motel	6.8	13.1	***247,800***	4,617	
Miscellaneous	8.8	12.2	***0***	0	
		Total (Ft2)	2,207,593	85,010	Total

Contaminant	CH_4	CO_2	CO2E	
Factor (lbs/MMBtu)	0.0086	110		Emission Factor Source: EPA AP-42 Table 3.1-2a
Factor (lbs/MWH)	0.0903	1155		1MW=10.5MMBtu/hr
Emis. (Lb/Dy)	7.7	98,186.5	98347.7	
Emissions (MT/YR)	**1.3**	**16,255.9**	**16,257.1**	

*****TOTAL PROJECT EMISSIONS *****

	CH_4	CO_2	CO2E
lbs/day	285.2	542,260.2	542,714.6
Metric Tons/Day	0.13	245.97	246.17
Emissions (MT/YR)	**47.2**	**89,777**	**89,852**

• MESTRE GREVE ASSOCIATES PROJECT EMISSIONS WORKSHEET •

v. 07.07

Project: *WVSPA*
Study Year: *2030*
APCD: *SCAQMD*

1. VEHICULAR EMISSIONS

Emission Factor Source: EMFAC2007

Number of Trips Per Day = *52,388* Composite Mix

	CH4	CO2	CO2E
Composite Mix			
Factors (lbs/trip)	0.00017	8.098	
Emissions (Lb/Dy)	9.1	424249.2	
Subtotal	9.13	424249.2	
Global Warming Potential (GWP)	21	1	
Emissions (Eq. Lb/Dy)	191.8	424,249.2	424,441.0
Emissions (MT/YR)	**31.8**	**70,239**	**70,271**

2. ON SITE EMISSIONS DUE TO NATURAL GAS COMBUSTION

Source: 1993 SCAQMD CEQA Handbook

Unit Type	Gas ft³/DU/Mo.	DU	Gas ft³/day	
Single Fam.	6665	*0*	0	
Mult. Fam. <=4	4105	*1,246*	167,699	
Mult. Fam. >=5	3918	*0*	0	
	ft³/ft²/Mo.	ft²	*167,699*	*Subtotal for Residential*
Office/Comm. Retail	2	*1,784,893*	117,042	
Elementary School	2.9	*174,900*	16,630	
Hotel	4.8	*247,800*	38,998	
	ft³/Customer/Mo.	Customers/Mo.	*172,670*	*Subtotal for Retail/Commercial*
Industrial	2936.6	*0*	0	
			0	*Subtotal for Industrial*
			340,369	**Total Gas Usage/Day**
	CH4	CO2	CO2E	Emission Factor Source: EPA AP-42 Table 1.4.3
Factor (lbs/10^6 ft³)	2.3	120,000.0		
Emissions (Lb/Dy)	0.8	40,844.3	40,860.8	
Emissions (MT/YR)	**0.1**	**6,762**	**6,762**	

3. OFF SITE EMISSIONS DUE ELECTRICAL GENERATION

Source: 1993 SCAQMD CEQA Handbook

Unit Type	SCE KWH/Unit/Yr	LADWP KWH/Unit/Yr	Number of Units or Ft2	Electrical Use (KWH/Day)	
Residential	6081	5172	*1,246*	20,759	
	KWH/Ft2/Yr.	KWH/Ft2/Yr.			
Commercial	8.8	17.1	*132,313*	3,190	
Restaurant	47.3	47.6	*0*	0	
Office/Retail	11.8	15.3	*1,652,580*	53,426	
Food Store	51.4	55.2	*0*	0	
Warehouse	3.4	5.3	*0*	0	
Elementary School	6.3	5.5	*174,900*	3,019	
College	11.6	11.5	*0*	0	
Hospital	17.9	25.5	*0*	0	
Hotel/Motel	6.8	13.1	*247,800*	4,617	
Miscellaneous	8.8	12.2	*0*	0	
		Total (Ft2)	2,207,593	85,010	Total
Contaminant	CH4	CO2	CO2E		Emission Factor Source: EPA AP-42 Table 3.1-2a
Factor (lbs/MMBtu)	0.0086	110			
Factor (lbs/MWH)	0.0903	1155			1MW=10.5MMBtu/hr
Emis. (Lb/Dy)	7.7	98,186.5	98347.7		
Emissions (MT/YR)	**1.3**	**16,255.9**	**16,257.1**		

***TOTAL PROJECT EMISSIONS ***

	CH4	CO2	CO2E
lbs/day	200.3	563,280.0	563,649.5
Metric Tons/Day	0.09	255.50	255.67
Emissions (MT/YR)	**33.2**	**93,257**	**93,318**

• MESTRE GREVE ASSOCIATES PROJECT EMISSIONS WORKSHEET •

v. 07.07

Project: ***WVSPA***
Study Year: ***2040***
APCD: ***SCAQMD***

1. VEHICULAR EMISSIONS

Emission Factor Source: EMFAC2007

Number of Trips Per Day = ***52,388*** Composite Mix

	CH4	CO2	CO2E
Composite Mix			
Factors (lbs/trip)	0.00016	8.821	
Emissions (Lb/Dy)	8.2	462123.3	
Subtotal	8.21	462123.3	
Global Warming Potential (GWP)	21	1	
Emissions (Eq. Lb/Dy)	172.5	462,123.3	462,295.8
Emissions (MT/YR)	**28.6**	**76,510**	**76,538**

2. ON SITE EMISSIONS DUE TO NATURAL GAS COMBUSTION

Source: 1993 SCAQMD CEQA Handbook

Unit Type	Gas ft³/DU/Mo.	DU	Gas ft³/day	
Single Fam.	6665	***0***	0	
Mult. Fam. <=4	4105	***1,246***	167,699	
Mult. Fam. >=5	3918	***0***	0	
	ft³/ft²/Mo.	ft²	*167,699*	*Subtotal for Residential*
Office/Comm. Retail	2	***1,784,893***	117,042	
Elementary School	2.9	***174,900***	16,630	
Hotel	4.8	***247,800***	38,998	
	ft³/Customer/Mo.	Customers/Mo.	*172,670*	*Subtotal for Retail/Commercial*
Industrial	2936.6	***0***	0	
			0	*Subtotal for Industrial*
			340,369	**Total Gas Usage/Day**
	CH4	CO2	CO2E	Emission Factor Source: EPA AP-42 Table 1.4.3
Factor (lbs/10^6 ft³)	2.3	120,000.0		
Emissions (Lb/Dy)	0.8	40,844.3	40,860.8	
Emissions (MT/YR)	**0.1**	**6,762**	**6,762**	

3. OFF SITE EMISSIONS DUE ELECTRICAL GENERATION

Source: 1993 SCAQMD CEQA Handbook

Unit Type	SCE KWH/Unit/Yr	LADWP KWH/Unit/Yr	Number of Units or Ft2	Electrical Use (KWH/Day)	
Residential	6081	5172	***1,246***	20,759	
	KWH/Ft2/Yr.	KWH/Ft2/Yr.			
Commercial	8.8	17.1	***132,313***	3,190	
Restaurant	47.3	47.6	***0***	0	
Office/Retail	11.8	15.3	***1,652,580***	53,426	
Food Store	51.4	55.2	***0***	0	
Warehouse	3.4	5.3	***0***	0	
Elementary School	6.3	5.5	***174,900***	3,019	
College	11.6	11.5	***0***	0	
Hospital	17.9	25.5	***0***	0	
Hotel/Motel	6.8	13.1	***247,800***	4,617	
Miscellaneous	8.8	12.2	***0***	0	
		Total (Ft2)	2,207,593	85,010	Total

Contaminant	CH4	CO2	CO2E	Emission Factor Source: EPA AP-42 Table 3.1-2a
Factor (lbs/MMBtu)	0.0086	110		
Factor (lbs/MWH)	0.0903	1155		1MW=10.5MMBtu/hr
Emis. (Lb/Dy)	7.7	98,186.5	98347.7	
Emissions (MT/YR)	**1.3**	**16,255.9**	**16,257.1**	

***TOTAL PROJECT EMISSIONS ***

	CH4	CO2	CO2E
lbs/day	180.9	601,154.2	601,504.3
Metric Tons/Day	0.08	272.68	272.84
Emissions (MT/YR)	**30.0**	**99,528**	**99,586**

Title : San Bernardino County Avg Annual 4 CYrs 2012 to 2040 Default Title
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/09/08 13:23:18
Scen Year: 2012 -- All model years in the range 1968 to 2012 selected
Season : Annual
Area : San Bernardino County Average
I/M Stat : Enhanced Interim (2005) -- Using I/M schedule for area 62 San Bernardino (SC)
Emissions: Tons Per Day

	LDA-NCAT	LDA-CAT	LDA-DSL	LDA-TOT	LDT1-NCAT	LDT1-CAT	LDT1-DSL	LDT1-TOT	LDT2-NCAT	LDT2-CAT	LDT2-DSL	LDT2-TOT	MDV-NCAT	MDV-CAT	MDV-DSL	MDV-TOT	LHDT1-NC	LHDT1-CA	LHDT1-DSI	LHDT1-TO	LHDT2-NC	LHDT2-CA	LHDT2-DSI	LHDT2-TO	MHDT-NCA	MHDT-CAT	MHDT-DSL	MHDT-TOT	HHDT-NCA	HHDT-CAT	HHDT-DSL	HHDT-TOT
Vehicles	4701	679361	1074	685137	2819	137352	5988	146159	1802	302361	535	304698	1147	163620	524	165291	93	22906	6415	29414	30	4969	4669	9669	186	2475	11674	14335	39	507	25344	25890
VMT/1000	83	26664	27	26774	65	5771	220	6057	40	12248	17	12305	24	6256	17	6297	2	1089	310	1402	1	223	202	425	2	135	770	906	1	61	4377	4439
Trips	18376	4278360	5682	4302420	11116	858885	36468	906469	7145	1900400	3021	1910570	4806	1032950	3210	1040970	3064	757428	80694	841186	998	164316	58735	224049	8475	113041	327334	448850	1774	23150	128254	153178
Methane Emissions																																
Run Exh	0.03	0.58	0	0.62	0.03	0.16	0	0.19	0.02	0.38	0	0.39	0.01	0.23	0	0.24	0	0.02	0	0.02	0	0	0	0.01	0	0.01	0.01	0.01	0	0.01	0.2	0.21
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.02
Start Ex	0.01	0.09	0	0.1	0	0.02	0	0.03	0	0.05	0	0.06	0	0.04	0	0.04	0	0.02	0	0.02	0	0	0	0.01	0.01	0.01	0	0.01	0	0.01	0	0.01
Total Ex	0.04	0.68	0	0.72	0.03	0.18	0	0.21	0.02	0.43	0	0.45	0.01	0.27	0	0.28	0	0.04	0	0.05	0	0.01	0	0.01	0.01	0.01	0.01	0.02	0	0.02	0.22	0.24
Diurnal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Soak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Resting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0.04	0.68	0	0.72	0.03	0.18	0	0.21	0.02	0.43	0	0.45	0.01	0.27	0	0.28	0	0.04	0	0.05	0	0.01	0	0.01	0.01	0.01	0.01	0.02	0	0.02	0.22	0.24
Lbs/trip	0.004	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.004	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.002	0.003	0.003
Trip Lenc	4.5	6.2	4.8	6.2	5.8	6.7	6.0	6.7	5.6	6.4	5.6	6.4	5.0	6.1	5.3	6.0	0.7	1.4	3.8	1.7	1.0	1.4	3.4	1.9	0.2	1.2	2.4	2.0	0.6	2.6	34.1	29.0
Carbon Dioxide Emissions (000)																																
Run Exh	0.05	10.9	0.01	10.96	0.04	2.94	0.08	3.06	0.02	6.28	0.01	6.31	0.02	4.38	0.01	4.41	0	0.76	0.18	0.94	0	0.16	0.12	0.27	0	0.09	1.28	1.37	0	0.04	8.59	8.64
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0	0	0	0	0	0	0.01	0.01	0	0	0.31	0.31
Start Ex	0	0.34	0	0.34	0	0.09	0	0.09	0	0.19	0	0.19	0	0.14	0	0.14	0	0.03	0	0.04	0	0.01	0	0.01	0	0	0	0.01	0	0	0	0
Total Ex	0.05	11.24	0.01	11.3	0.04	3.02	0.08	3.14	0.02	6.47	0.01	6.5	0.02	4.52	0.01	4.55	0	0.8	0.18	0.98	0	0.16	0.12	0.28	0	0.1	1.28	1.38	0	0.05	8.9	8.95
Lbs/trip	5.442	5.254	3.520	5.253	7.197	7.032	4.387	6.928	5.598	6.809	6.620	6.804	8.323	8.752	6.231	8.742	0.000	2.112	4.461	2.330	0.000	1.947	4.086	2.499	0.000	1.769	7.821	6.149	0.000	4.320	138.787	116.858
Trip Lenc	4.5	6.2	4.8	6.2	5.8	6.7	6.0	6.7	5.6	6.4	5.6	6.4	5.0	6.1	5.3	6.0	0.7	1.4	3.8	1.7	1.0	1.4	3.4	1.9	0.2	1.2	2.4	2.0	0.6	2.6	34.1	29.0

Title : San Bernardino County Avg Annual 4 CYrs 2012 to 2040 Default Title
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/09/08 13:23:18
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Annual
Area : San Bernardino County Average
I/M Stat : Enhanced Interim (2005) -- Using I/M schedule for area 62 San Bernardino (SC)
Emissions: Tons Per Day

	LDA-NCAT	LDA-CAT	LDA-DSL	LDA-TOT	LDT1-NCAT	LDT1-CAT	LDT1-DSL	LDT1-TOT	LDT2-NCAT	LDT2-CAT	LDT2-DSL	LDT2-TOT	MDV-NCAT	MDV-CAT	MDV-DSL	MDV-TOT	LHDT1-NC	LHDT1-CA	LHDT1-DSI	LHDT1-TO	LHDT2-NC	LHDT2-CA	LHDT2-DSI	LHDT2-TO	MHDT-NCA	MHDT-CAT	MHDT-DSL	MHDT-TOT	HHDT-NCA	HHDT-CAT	HHDT-DSL	HHDT-TOT
Vehicles	75	778686	373	779134	61	165713	3225	168998	54	363848	207	364109	289	200112	322	200723	11	29517	7714	37242	1	6537	5428	11967	9	3349	14042	17400	2	562	29938	30502
VMT/1000	1	29932	9	29942	1	6909	101	7011	1	14363	6	14370	6	7363	9	7378	0	1298	334	1632	0	283	226	509	0	176	865	1041	0	75	5773	5848
Trips	285	4859750	1881	4861910	233	1025350	18348	1043930	208	2255090	1122	2256420	1094	1243510	1861	1246460	364	976028	97027	1073420	29	216171	68282	284482	397	152965	393740	547103	82	25686	151501	177268
Methane Emissions																																
Run Exh	0	0.36	0	0.36	0	0.11	0	0.11	0	0.29	0	0.29	0	0.18	0	0.18	0	0.01	0	0.02	0	0	0	0	0	0	0	0.01	0	0.01	0.1	0.11
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.02
Start Ex	0	0.04	0	0.04	0	0.01	0	0.01	0	0.03	0	0.03	0	0.03	0	0.03	0	0.02	0	0.02	0	0	0	0	0	0.01	0	0.01	0	0	0	0
Total Ex	0	0.4	0	0.4	0	0.12	0	0.12	0	0.33	0	0.33	0	0.21	0	0.21	0	0.03	0	0.04	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0.12	0.14
Diurnal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Soak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Resting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0.4	0	0.4	0	0.12	0	0.12	0	0.33	0	0.33	0	0.21	0	0.21	0	0.03	0	0.04	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0.12	0.14
Lbs/trip	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.002
Trip Lenc	3.5	6.2	4.8	6.2	4.3	6.7	5.5	6.7	4.8	6.4	5.3	6.4	5.5	5.9	4.8	5.9	0.0	1.3	3.4	1.5	0.0	1.3	3.3	1.8	0.0	1.2	2.2	1.9	0.0	2.9	38.1	33.0
Carbon Dioxide Emissions (000)																																
Run Exh	0	12.23	0	12.23	0	3.53	0.04	3.57	0	7.47	0	7.47	0	5.22	0	5.23	0	0.92	0.19	1.11	0	0.2	0.13	0.33	0	0.12	1.43	1.56	0	0.05	11.38	11.44
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0	0	0	0	0	0	0.01	0.01	0	0	0.37	0.37
Start Ex	0	0.38	0	0.38	0	0.1	0	0.1	0	0.22	0	0.22	0	0.17	0	0.17	0	0.05	0	0.05	0	0.01	0	0.01	0	0.01	0	0.01	0	0	0	0
Total Ex	0	12.6	0	12.61	0	3.63	0.04	3.67	0	7.69	0	7.7	0	5.39	0	5.4	0	0.98	0.19	1.17	0	0.21	0.13	0.35	0	0.13	1.44	1.57	0	0.06	11.75	11.81
Lbs/trip	0.000	5.185	0.000	5.187	0.000	7.081	4.360	7.031	0.000	6.820	0.000	6.825	0.000	8.669	0.000	8.665	0.000	2.008	3.916	2.180	0.000	1.943	3.808	2.461	0.000	1.700	7.314	5.739	0.000	4.672	155.114	133.245
Trip Lenc	3.5	6.2	4.8	6.2	4.3	6.7	5.5	6.7	4.8	6.4	5.3	6.4	5.5	5.9	4.8	5.9	0.0	1.3	3.4	1.5	0.0	1.3	3.3	1.8	0.0	1.2	2.2	1.9	0.0	2.9	38.1	33.0

Title : San Bernardino County Avg Annual 4 CYrs 2012 to 2040 Default Title
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/09/08 13:23:18
Scen Year: 2030 -- All model years in the range 1986 to 2030 selected
Season : Annual
Area : San Bernardino County Average
I/M Stat : Enhanced Interim (2005) -- Using I/M schedule for area 62 San Bernardino (SC)
Emissions: Tons Per Day

	LDA-NCAT	LDA-CAT	LDA-DSL	LDA-TOT	LDT1-NCAT	LDT1-CAT	LDT1-DSL	LDT1-TOT	LDT2-NCAT	LDT2-CAT	LDT2-DSL	LDT2-TOT	MDV-NCAT	MDV-CAT	MDV-DSL	MDV-TOT	LHDT1-NC	LHDT1-CA	LHDT1-DSI	LHDT1-TO	LHDT2-NC	LHDT2-CA	LHDT2-DSI	LHDT2-TO	MHDT-NCA	MHDT-CAT	MHDT-DSL	MHDT-TOT	HHDT-NCA	HHDT-CAT	HHDT-DSL	HHDT-TOT
Vehicles	0	891362	64	891426	0	199720	1119	200839	0	440563	49	440611	0	244606	137	244743	0	36704	8895	45599	0	8322	6292	14614	0	4319	16916	21235	0	678	40788	41466
VMT/1000	0	34068	1	34069	0	8281	30	8311	0	17280	1	17281	0	8893	3	8897	0	1591	379	1970	0	354	263	617	0	217	1007	1225	0	102	8063	8164
Trips	0	5532880	304	5533180	0	1225550	5323	1230870	0	2702950	225	2703170	0	1498560	672	1499230	0	1213680	111885	1325560	0	275179	79147	354326	0	197249	474313	671561	0	30951	206409	237360
Methane Emissions																																
Run Exh	0	0.26	0	0.26	0	0.07	0	0.08	0	0.26	0	0.26	0	0.16	0	0.16	0	0.01	0	0.01	0	0	0	0	0	0	0	0.01	0	0.01	0.08	0.09
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0.03
Start Ex	0	0.02	0	0.02	0	0.01	0	0.01	0	0.02	0	0.02	0	0.02	0	0.02	0	0.01	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0
Total Ex	0	0.28	0	0.28	0	0.08	0	0.08	0	0.28	0	0.28	0	0.17	0	0.17	0	0.02	0	0.03	0	0	0	0.01	0	0.01	0	0.01	0	0.01	0.11	0.12
Diurnal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Soak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Resting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0.28	0	0.28	0	0.08	0	0.08	0	0.28	0	0.28	0	0.17	0	0.17	0	0.02	0	0.03	0	0	0	0.01	0	0.01	0	0.01	0	0.01	0.11	0.12
Lbs/trip	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.001	0.001	0.001
Trip Lenc	#DIV/0!	6.2	3.3	6.2	#DIV/0!	6.8	5.6	6.8	#DIV/0!	6.4	4.4	6.4	#DIV/0!	5.9	4.5	5.9	#DIV/0!	1.3	3.4	1.5	#DIV/0!	1.3	3.3	1.7	#DIV/0!	1.1	2.1	1.8	#DIV/0!	3.3	39.1	34.4

Carbon Dioxide Emissions (000)																																
Run Exh	0	13.89	0	13.89	0	4.25	0.01	4.26	0	9.06	0	9.06	0	6.35	0	6.35	0	1.22	0.22	1.44	0	0.27	0.15	0.42	0	0.16	1.67	1.84	0	0.08	15.87	15.95
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0	0	0	0	0	0	0.01	0.01	0	0	0.5	0.5
Start Ex	0	0.43	0	0.43	0	0.12	0	0.12	0	0.27	0	0.27	0	0.2	0	0.2	0	0.06	0	0.06	0	0.01	0	0.01	0	0.01	0	0.01	0	0	0	0
Total Ex	0	14.32	0	14.32	0	4.37	0.01	4.38	0	9.33	0	9.33	0	6.55	0	6.55	0	1.29	0.22	1.51	0	0.29	0.15	0.44	0	0.17	1.68	1.85	0	0.08	16.37	16.45
Lbs/trip	#DIV/0!	5.176	0.000	5.176	#DIV/0!	7.131	3.757	7.117	#DIV/0!	6.904	0.000	6.903	#DIV/0!	8.742	0.000	8.738	#DIV/0!	2.126	3.933	2.278	#DIV/0!	2.108	3.790	2.484	#DIV/0!	1.724	7.084	5.510	#DIV/0!	5.169	158.617	138.608
Trip Lenc	#DIV/0!	6.2	3.3	6.2	#DIV/0!	6.8	5.6	6.8	#DIV/0!	6.4	4.4	6.4	#DIV/0!	5.9	4.5	5.9	#DIV/0!	1.3	3.4	1.5	#DIV/0!	1.3	3.3	1.7	#DIV/0!	1.1	2.1	1.8	#DIV/0!	3.3	39.1	34.4

Title : San Bernardino County Avg Annual 4 CYrs 2012 to 2040 Default Title
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2008/09/08 13:23:18
Scen Year: 2040 -- All model years in the range 1996 to 2040 selected
Season : Annual
Area : San Bernardino County Average
I/M Stat : Enhanced Interim (2005) -- Using I/M schedule for area 62 San Bernardino (SC)
Emissions: Tons Per Day
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	LDA-NCAT	LDA-CAT	LDA-DSL	LDA-TOT	LDT1-NCAT	LDT1-CAT	LDT1-DSL	LDT1-TOT	LDT2-NCAT	LDT2-CAT	LDT2-DSL	LDT2-TOT	MDV-NCAT	MDV-CAT	MDV-DSL	MDV-TOT	LHDT1-NC/	LHDT1-CAT	LHDT1-DSI	LHDT1-TOT	LHDT2-NC/	LHDT2-CAT	LHDT2-DSI	LHDT2-TOT	MHDT-NCA	MHDT-CAT	MHDT-DSL	MHDT-TOT	HHDT-NCA	HHDT-CAT	HHDT-DSL	HHDT-TOT
Vehicles	0	979163	9	979172	0	240895	336	241231	0	529962	7	529969	0	297008	37	297044	0	40394	9321	49716	0	9082	6677	15759	0	4710	17960	22670	0	895	57013	57907
VMT/1000	0	37242	0	37243	0	10080	8	10088	0	20880	0	20880	0	10839	1	10840	0	1688	388	2077	0	375	273	648	0	222	1023	1245	0	142	11377	11519
Trips	0	6061190	37	6061220	0	1478300	1341	1479640	0	3246130	26	3246160	0	1811500	149	1811650	0	1335710	117252	1452960	0	300320	83984	384304	0	215109	503594	718703	0	40852	288514	329367
Methane Emissions																																
Run Exh	0	0.24	0	0.24	0	0.07	0	0.07	0	0.29	0	0.29	0	0.17	0	0.17	0	0.01	0	0.01	0	0	0	0	0	0	0	0.01	0	0.02	0.11	0.12
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04	0.04
Start Ex	0	0.01	0	0.01	0	0	0	0	0	0.02	0	0.02	0	0.01	0	0.01	0	0.01	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0
Total Ex	0	0.26	0	0.26	0	0.07	0	0.07	0	0.3	0	0.3	0	0.18	0	0.18	0	0.02	0	0.02	0	0	0	0.01	0	0.01	0	0.01	0	0.02	0.14	0.16
Diurnal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Soak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Resting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0.26	0	0.26	0	0.07	0	0.07	0	0.3	0	0.3	0	0.18	0	0.18	0	0.02	0	0.02	0	0	0	0.01	0	0.01	0	0.01	0	0.02	0.14	0.16
Lbs/trip	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.001	0.001	0.001
Trip Lenc	#DIV/0!	6.1	0.0	6.1	#DIV/0!	6.8	6.0	6.8	#DIV/0!	6.4	0.0	6.4	#DIV/0!	6.0	6.7	6.0	#DIV/0!	1.3	3.3	1.4	#DIV/0!	1.2	3.3	1.7	#DIV/0!	1.0	2.0	1.7	#DIV/0!	3.5	39.4	35.0
Carbon Dioxide Emissions (000)																																
Run Exh	0	15.37	0	15.37	0	5.23	0	5.24	0	11.12	0	11.12	0	7.85	0	7.85	0	1.31	0.22	1.53	0	0.29	0.16	0.45	0	0.17	1.7	1.87	0	0.11	22.46	22.57
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0	0	0	0	0	0	0.01	0.01	0	0	0.7	0.7
Start Ex	0	0.46	0	0.46	0	0.14	0	0.14	0	0.32	0	0.32	0	0.24	0	0.24	0	0.07	0	0.07	0	0.01	0	0.01	0	0.01	0	0.01	0	0	0	0
Total Ex	0	15.83	0	15.83	0	5.38	0	5.38	0	11.44	0	11.44	0	8.1	0	8.1	0	1.38	0.22	1.61	0	0.31	0.16	0.47	0	0.18	1.7	1.88	0	0.11	23.16	23.27
Lbs/trip	#DIV/0!	5.223	0.000	5.223	#DIV/0!	7.279	0.000	7.272	#DIV/0!	7.048	0.000	7.048	#DIV/0!	8.943	0.000	8.942	#DIV/0!	2.066	3.753	2.216	#DIV/0!	2.064	3.810	2.446	#DIV/0!	1.674	6.751	5.232	#DIV/0!	5.385	160.547	141.301
Trip Lenc	#DIV/0!	6.1	0.0	6.1	#DIV/0!	6.8	6.0	6.8	#DIV/0!	6.4	0.0	6.4	#DIV/0!	6.0	6.7	6.0	#DIV/0!	1.3	3.3	1.4	#DIV/0!	1.2	3.3	1.7	#DIV/0!	1.0	2.0	1.7	#DIV/0!	3.5	39.4	35.0

Title : San
Version : Er
Run Date : 2
Scen Year: 2
Season : A
Area : Sa
I/M Stat : Er
Emissions: T
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	OBUS-NCA	OBUS-CAT	OBUS-DSL	OBUS-TOT	SBUS-NCA	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
Vehicles	15	468	366	848	39	140	1759	1938	0	288	171	459	492	17170	2102	19764	35836	25100	0	60936	1464540
VMT/1000	0	20	19	39	2	6	74	81	0	34	20	54	4	200	25	229	332	292	0	624	59632
Trips	680	21356	10252	32288	158	558	7034	7750	0	1152	683	1835	49	1718	210	1977	71665	50195	0	121860	9993400
Methane Em																					
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0.1	0.06	0	0.16	1.86
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0.02	0.29
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0.11	0.07	0	0.18	2.18
Diurnal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Soak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Resting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0.11	0.07	0	0.18	2.18
Lbs/trip	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	0.000	0.012	0.000	0.010	0.003	0.003	#DIV/0!	0.003	**0.00044**
Trip Leng	0.0	0.9	1.9	1.2	12.7	10.8	10.5	10.5	#DIV/0!	29.5	29.3	29.4	81.6	116.4	119.0	115.8	4.6	5.8	#DIV/0!	5.1	6.0
Carbon Diox																					
Run Exh	0	0.01	0.03	0.04	0	0	0.12	0.13	0	0.03	0.06	0.09	0	0.14	0.04	0.18	0.04	0.06	0	0.1	36.5
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.33
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.82
Total Ex	0	0.01	0.03	0.05	0	0	0.13	0.13	0	0.03	0.06	0.09	0	0.14	0.04	0.18	0.05	0.06	0	0.11	37.65
Lbs/trip	0.000	0.937	5.853	3.097	0.000	0.000	36.963	33.548	#DIV/0!	52.083	175.695	98.093	0.000	162.980	380.952	182.094	1.395	2.391	#DIV/0!	1.805	**7.535**
Trip Leng	0.0	0.9	1.9	1.2	12.7	10.8	10.5	10.5	#DIV/0!	29.5	29.3	29.4	81.6	116.4	119.0	115.8	4.6	5.8	#DIV/0!	5.1	6.0

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	OBUS-NCA	OBUS-CAT	OBUS-DSL	OBUS-TOT	SBUS-NCA	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
Vehicles	1	376	551	928	1	175	2141	2317	0	325	219	544	20	21534	2554	24107	29671	45438	0	75108	1713080
VMT/1000	0	13	32	45	0	7	90	98	0	38	26	64	0	257	29	287	272	480	0	751	68976
Trips	27	17190	15451	32667	4	701	8563	9268	0	1299	876	2175	2	2154	255	2412	59335	90866	0	150201	11687700
Methane Em																					
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08	0.1	0	0.18	1.28
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0.02	0.17
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0.11	0	0.21	1.47
Diurnal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Soak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Resting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0.11	0	0.21	1.47
Lbs/trip	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.002	#DIV/0!	0.003	**0.00025**
Trip Leng	0.0	0.8	2.1	1.4	0.0	10.0	10.5	10.6	#DIV/0!	29.3	29.7	29.4	0.0	119.3	113.7	119.0	4.6	5.3	#DIV/0!	5.0	5.9
Carbon Diox																					
Run Exh	0	0.01	0.05	0.06	0	0.01	0.15	0.16	0	0.03	0.07	0.1	0	0.18	0.05	0.23	0.03	0.11	0	0.14	43.64
Idle Exh	0	0	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0.39
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.94
Total Ex	0	0.01	0.05	0.06	0	0.01	0.16	0.16	0	0.03	0.07	0.1	0	0.18	0.05	0.23	0.04	0.11	0	0.15	44.98
Lbs/trip	0.000	1.163	6.472	3.673	0.000	28.531	37.370	34.527	#DIV/0!	46.189	159.817	91.954	0.000	167.131	392.157	190.713	1.348	2.421	#DIV/0!	1.997	**7.697**
Trip Leng	0.0	0.8	2.1	1.4	0.0	10.0	10.5	10.6	#DIV/0!	29.3	29.7	29.4	0.0	119.3	113.7	119.0	4.6	5.3	#DIV/0!	5.0	5.9

Title : San
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	OBUS-NCA	OBUS-CAT	OBUS-DSL	OBUS-TOT	SBUS-NCA	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
Vehicles	0	283	724	1008	0	228	2573	2800	0	377	290	667	0	31472	3285	34757	26933	53152	0	80085	2019850
VMT/1000	0	10	40	50	0	10	108	118	0	44	34	78	0	380	38	419	257	521	0	779	81976
Trips	0	12937	20313	33250	0	911	10291	11202	0	1507	1162	2669	0	3148	329	3477	53861	106293	0	160154	13766000
Methane Em																					
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08	0.11	0	0.19	1.06
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0.02	0.11
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0.12	0	0.21	1.2
Diurnal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Soak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Resting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0.12	0	0.21	1.2
Lbs/trip	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	0.003	0.002	#DIV/0!	0.003	**0.00017**
Trip Leng	#DIV/0!	0.8	2.0	1.5	#DIV/0!	11.0	10.5	10.5	#DIV/0!	29.2	29.3	29.2	#DIV/0!	120.7	115.5	120.5	4.8	4.9	#DIV/0!	4.9	6.0

Carbon Diox																					
Run Exh	0	0.01	0.07	0.07	0	0.01	0.18	0.19	0	0.04	0.09	0.12	0	0.29	0.06	0.35	0.03	0.12	0	0.15	54.1
Idle Exh	0	0	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0.53
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	1.11
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Total Ex	0	0.01	0.07	0.08	0	0.01	0.19	0.19	0	0.04	0.09	0.12	0	0.29	0.06	0.35	0.04	0.12	0	0.16	55.74
Lbs/trip	#DIV/0!	1.546	6.892	4.812	#DIV/0!	21.954	36.925	33.923	#DIV/0!	53.086	154.905	89.921	#DIV/0!	184.244	364.742	201.323	1.485	2.258	#DIV/0!	1.998	**8.098**
Trip Lenc	#DIV/0!	0.8	2.0	1.5	#DIV/0!	11.0	10.5	10.5	#DIV/0!	29.2	29.3	29.2	#DIV/0!	120.7	115.5	120.5	4.8	4.9	#DIV/0!	4.9	6.0

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	OBUS-NCA	OBUS-CAT	OBUS-DSL	OBUS-TOT	SBUS-NCA	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
Vehicles	0	231	742	973	0	367	3012	3379	0	480	339	819	0	56002	5327	61329	25238	51543	0	76782	2336750
VMT/1000	0	8	37	46	0	15	126	142	0	56	40	96	0	688	64	752	241	493	0	734	96308
Trips	0	10533	20808	31340	0	1467	12050	13517	0	1918	1356	3275	0	5602	533	6135	50472	103076	0	153548	15691800
Methane En																					
Run Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0.11	0	0.18	1.1
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0	0.02	0.09
	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Total Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08	0.12	0	0.2	1.23
Diurnal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Soak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Running	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Resting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08	0.12	0	0.2	1.23
Lbs/trip	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	#DIV/0!	0.000	0.000	0.000	0.003	0.002	#DIV/0!	0.003	**0.00016**
Trip Lenc	#DIV/0!	0.8	1.8	1.5	#DIV/0!	10.2	10.5	10.5	#DIV/0!	29.2	29.5	29.3	#DIV/0!	122.8	120.1	122.6	4.8	4.8	#DIV/0!	4.8	6.1
	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Carbon Diox																					
Run Exh	0	0.01	0.06	0.07	0	0.01	0.21	0.22	0	0.05	0.1	0.14	0	0.53	0.11	0.64	0.03	0.11	0	0.14	67.2
Idle Exh	0	0	0	0	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0.74
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	1.27
	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Total Ex	0	0.01	0.06	0.07	0	0.01	0.22	0.23	0	0.05	0.1	0.14	0	0.53	0.11	0.64	0.04	0.12	0	0.15	69.21
Lbs/trip	#DIV/0!	1.899	5.767	4.467	#DIV/0!	13.633	36.515	34.031	#DIV/0!	52.138	147.493	85.496	#DIV/0!	189.218	412.758	208.639	1.585	2.328	#DIV/0!	1.954	**8.821**
Trip Lenc	#DIV/0!	0.8	1.8	1.5	#DIV/0!	10.2	10.5	10.5	#DIV/0!	29.2	29.5	29.3	#DIV/0!	122.8	120.1	122.6	4.8	4.8	#DIV/0!	4.8	6.1