Appendix B-1
Air Quality Impact Analysis

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THE AVENUE SPECIFIC PLAN AIR QUALITY IMPACT ANALYSIS CITY OF ONTARIO, CALIFORNIA

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THE AVENUE SPECIFIC PLAN
AIR QUALITY IMPACT ANALYSIS
CITY OF ONTARIO, CALIFORNIA

1.0 EXECUTIVE SUMMARY

1.1 Introduction

This analysis is intended to determine the impacts to air quality associated with the development of the proposed The Avenue Specific Plan residential project (“Project”). Urban Crossroads, Inc. previously prepared an air quality impact analysis for The Avenue Specific Plan in August 2006. Due to changes in the project’s description (increase in intensity) and relocation of land uses, this supplemental air quality analysis has been prepared. This supplemental air study will specifically address potential impacts related to the increase in project intensity. The increase in land use includes 286 dwelling units and 76,000 square feet of commercial use. It should be noted that the construction analysis presented in this report accounts for the construction of the entire project, as the assumptions utilized in the analysis have changed following the preparation of the previous air study. The westerly boundary of the Specific Plan is Carpenter Avenue and the easterly boundary is Haven Avenue. The northerly and southerly boundaries are Schaefer Avenue and Edison Avenue, respectively.

Specifically, this air quality analysis will evaluate the potential air quality impacts associated with the development (i.e. construction and operations) of the proposed project. Lastly, emissions reduction measures will be identified to reduce the potential for significant air quality impacts due to short-term construction and long-term operational activity of the project.

1.2 Air Quality Setting

The project site is located in the South Coast Air Basin within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The Basin is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east.

The nearest long-term air quality monitoring site in relation to the project for Inhalable Particulates (PM_{10}) and Ultra-Fine Particulates ($PM_{2.5}$) is carried out by the South Coast Air Quality

Management District (SCAQMD) at the Southwest San Bernardino Valley monitoring station located approximately 3.3 miles northwest of the project site. Data for Ozone (O_3), Carbon Monoxide (CO), and Nitrogen Dioxide (NO_2) was obtained from the Mira Loma monitoring station located approximately 4.0 miles east of the project site. It should be noted that the Mira Loma monitoring station was utilized in lieu of the Southwest San Bernardino Valley monitoring station only where data was not available from the nearest monitoring site. Additionally, data for SO_2 has been omitted as attainment is regularly met in the South Coast Air Basin and few monitoring stations measure SO_2 concentrations.

Criteria pollutants are pollutants that are regulated through the development of human health based and/or environmentally based criteria for setting permissible levels. Examples of sources and effects of the criteria pollutants are identified below:

- Carbon Monoxide (CO): Carbon monoxide is a colorless, odorless, tasteless and toxic gas resulting from the incomplete combustion of fossil fuels. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. CO is a criteria air pollutant.

- Oxides of Sulfur (SO_x): Typically strong smelling, colorless gases that are formed by the combustion of fossil fuels. SO_2 and other sulfur oxides contribute to the problem of acid deposition. SO_2 is a criteria air pollutant.

- Nitrogen Oxides (Oxides of Nitrogen, or NO_x): Nitrogen oxides (NO_x) consist of nitric oxide (NO), nitrogen dioxide (NO_2) and nitrous oxide (N_2O) and are formed when nitrogen (N_2) combines with oxygen (O_2). Their lifespan in the atmosphere ranges from one to seven days for nitric oxide and nitrogen dioxide, to 170 years for nitrous oxide. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO_2 is a criteria air pollutant, and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility.

- Ozone (O_3): A strong smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy. Ozone exists in the upper atmosphere ozone layer as well as at the earth's surface. Ozone at the earth's surface causes numerous adverse health effects and is a criteria air pollutant. It is a major component of smog.

- PM$_{10}$ (Particulate Matter less than 10 microns): A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM$_{10}$ also causes visibility reduction and is a criteria air pollutant.

- PM$_{2.5}$ (Particulate Matter less than 2.5 microns): A similar air pollutant consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO_2 release from power plants and industrial facilities and nitrates that are formed from NO_X release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions. PM$_{2.5}$ is a criteria air pollutant.

- Volatile Organic Compounds (VOC): Volatile organic compounds are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include: carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant.

- Reactive Organic Gasses (ROG): Similar to VOC, Reactive Organic Gasses (ROG) are also precursors in forming ozone and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when

ROG and nitrogen oxides react in the presence of sunlight. ROGs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant.

- Lead (Pb): Lead is a heavy metal that is highly persistent in the environment. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. As a result of the removal of lead from gasoline, there have been no violations at any of the SCAQMD's regular air monitoring stations since 1982. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. It should be noted that the proposed project is not anticipated to generate a quantifiable amount of lead emissions. Lead is a criteria air pollutant.

The EPA (under the Federal Clean Air Act of 1970, and amended in 1977) established ambient air quality standards for these pollutants. This standard is called the National Ambient Air Quality Standards (NAAQS). The California Air Resources Board (CARB) subsequently established the more stringent California Ambient Air Quality Standards (CAAQS). Both sets of standards, as well as a detailed discussion of the health effects of each pollutant are shown in Table 3-1 (presented later in this report). Areas in California where ambient air concentrations of pollutants are higher than the state standard are considered to be in "non-attainment" status for that pollutant.

1.3 Summary of Findings

The results of the analysis indicate that during short-term construction, even with implementation of the recommended mitigation measures, emissions of VOCs, NO_X, CO, PM_{10}, and $PM_{2.5}$ cannot be reduced to levels below the regional pollutant thresholds established by the SCAQMD. Additionally, even with implementation of the recommended mitigation measures, emissions resulting from short-term construction will exceed the SCAQMD localized emissions threshold for emissions of PM_{10}.

For long-term operational activities, the results of the analysis indicate that the increase in land uses will not exceed SCAQMD regional or localized pollutant thresholds (before and after mitigation). The results of the analysis support the following conclusions:

- The project is in compliance with the SCAQMD's 2007 Air Quality Management Plan;

- The project-generated emissions have the potential to violate Federal or State ambient air quality standards;

- The project's contribution to cumulative impacts is cumulatively considerable;

- The project has the potential to expose sensitive receptors to substantial pollutant concentrations; and

- Project-generated odors will not affect a substantial number of people.

1.4 Standard Regulatory Requirements

SCAQMD Rules that are currently applicable during construction activity for this project include but are not limited to: Rule 1113 (Architectural Coatings); Rule 431.2 (Low Sulfur Fuel); Rule 403 (Fugitive Dust); and Rule 1186 / 1186.1 (Street Sweepers).

The specific Rule 403 regulatory requirements that are applicable to this project are as follows:

- All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.

- The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the project are watered at least three times daily during dry weather. Implementation of this measure is estimated to reduce PM10 and PM2.5 fugitive dust emissions by approximately 61%.

- The contractor shall ensure that traffic speeds on unpaved roads and project site areas are reduced to 15 miles per hour or less to reduce PM10 and PM2.5 fugitive dust haul road emissions by approximately 44%.

A more detailed summary of Rule 403 requirements is presented in Appendix "F".

Additional regulatory requirements that are in effect during project construction include the following:

- The California Air Resources Board, in Title 13, Chapter 10, Section 2485, Division 3 of the of the California Code of Regulations, imposes a requirement that heavy duty trucks accessing the site shall not idle for greater than five minutes at any location.

- The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and during smog season (May through October) by not allowing construction equipment to be left idling for more than five minutes (per California law). As a conservative measure, no reduction was taken in this analysis for the use of properly timed and tuned equipment.

- The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less). As a conservative measure, no reduction was taken in this analysis for the use of low-sulfur diesel fuel.

- During construction of the proposed project, only low-polluting paints and coatings as defined in SCAQMD Rule 1113 shall be used.

1.5 Construction Activity Recommended Mitigation Measures

- Recommended emissions reduction measures to reduce construction air quality impacts include:

- The contractor shall ensure that the use of all off-road construction equipment is suspended during first-stage smog alerts.

- During grading activities, chemical soil stabilizers shall be applied to inactive areas to reduce fugitive dust emissions. It is conservatively estimated that implementation of this measure will reduce PM_{10} and $PM_{2.5}$ fugitive dust emissions by approximately 84%.

- Contractor shall ensure that all off-road heavy-duty construction equipment utilized during construction activity will be CARB Tier 2 Certified or better (to the maximum extent feasible). Implementation of this measure is estimated to reduce emissions of VOCs, NO_X, PM_{10}, and $PM_{2.5}$ from associated construction equipment by approximately 78.31%, 54.57%, 54.82%, and 50.43%, respectively.

- The contractor shall utilize existing power sources (e.g., power poles) or clean-fuel generators rather than diesel or gasoline powered generators where feasible. The effectiveness of this measure to reduce emissions is not quantified by the SCAQMD.

1.7 Operational Activity Recommended Mitigation Measures

Recommended mitigation measures to reduce operational air quality impacts for mobile and stationary sources to the maximum extent possible include:

- Construction of buildings that exceed minimum statewide energy requirements 20% beyond Title 24; this may include, at a minimum, but is not limited to:
  - Use of low emission water heaters
  - Use of central water heating systems
  - Use of energy efficient appliances
  - Use of increased insulation
  - Use of automated controls for air conditioners
  - Use of energy-efficient parking lot lights
  - Use of lighting controls and energy-efficient lighting

- Require that project tenants utilize low-VOC interior and exterior coatings during project repainting consistent with SCAQMD Rule 1113.

- Minimize exposure of building occupants to environmental tobacco smoke by prohibiting smoking in building, designating smoking areas at least 25-feet away from building entries, air intakes, and operable windows.

- Provide additional outdoor air ventilation to improve indoor air quality for improved occupant comfort, well-being, and productivity in the office buildings.

- Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants through compliance with SCAQMD Rule 1168, which limits the VOC content of paints, varnish, floor coatings, stains, adhesives, sealants, and primers.

- Provide site improvements such as street lighting, street furniture, route signs, and sidewalks or pedestrian paths to promote pedestrian activity for short trips.

2.0 INTRODUCTION

2.1 Purpose of Report

The purpose of this report is to evaluate the air quality impacts resulting from the proposed project. This initial section of the air quality impact analysis report describes the project and summarizes the atmospheric setting within the study area. Subsequent sections of the report describe the existing air quality setting for the study area; evaluate the project air quality impacts, and present recommended mitigation measures that should be implemented in conjunction with the proposed project.

2.2 Site Location

The project site is generally located north of Edison Avenue, east of Hellman Avenue, south of Schaefer Avenue, and west of Haven Avenue in the City of Ontario. Exhibit 2-A illustrates the location of the project site within the study area.

2.3 Existing Land Use

The project site currently consists of residential and agricultural land uses. The implementation of the project will likely reduce fugitive dust emissions and odor associated with the current agriculture operations; however the project would generate new emissions of fugitive dust during construction and operational activity (discussed later in this report). Adjacent land uses include the following:

North – Residential
South – Agriculture
East – Agriculture
West – Agriculture

2.4 Proposed Project

The Avenue Specific Plan development is located in the City of Ontario. The proposed project is illustrated in Exhibit 2-B. As shown on Exhibit 2-B, the project has been divided into eleven planning areas and includes a mix of residential, commercial, school and park uses. The project opening year for analysis is 2015.

EXHIBIT 2-A
LOCATION MAP

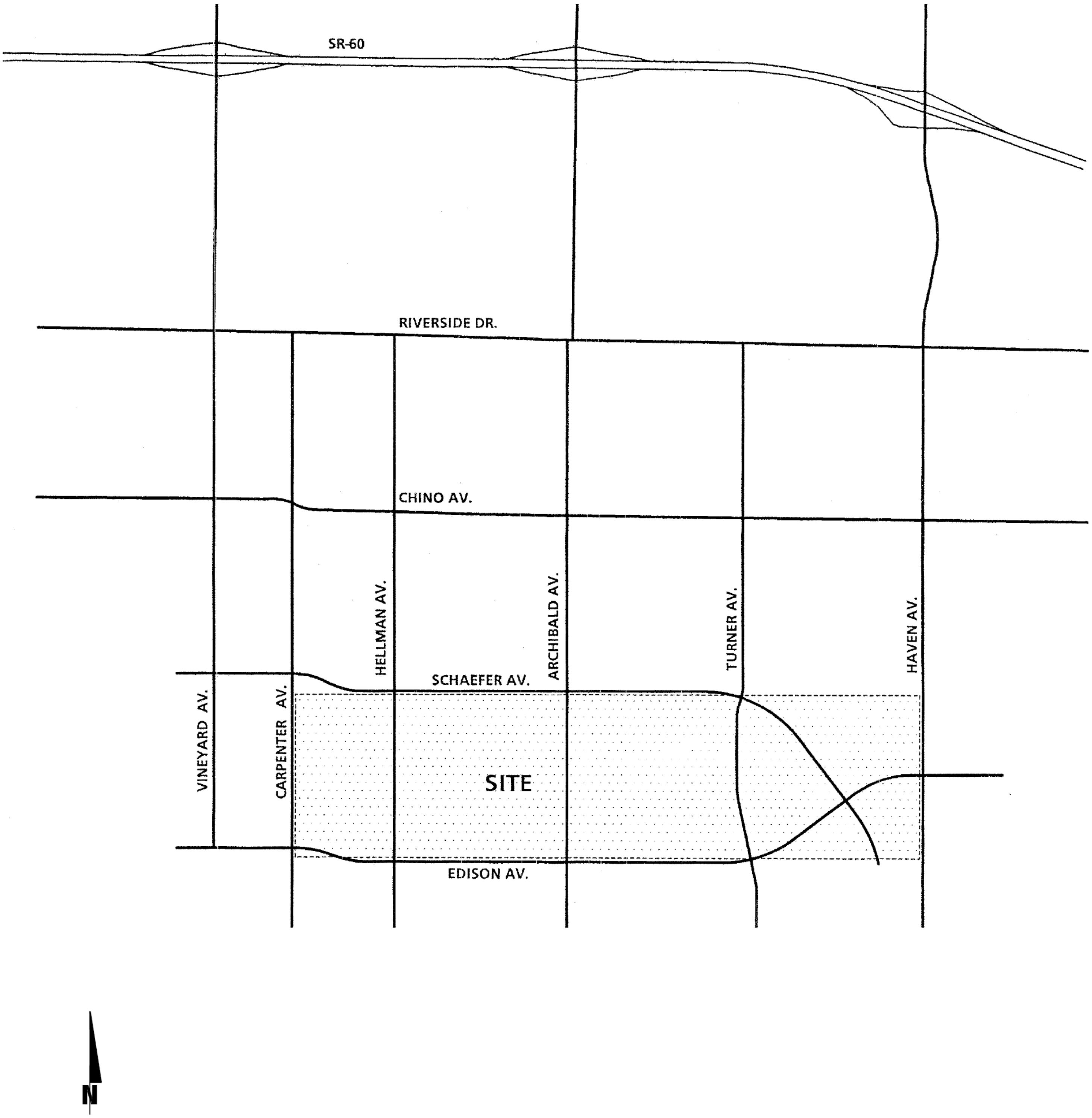
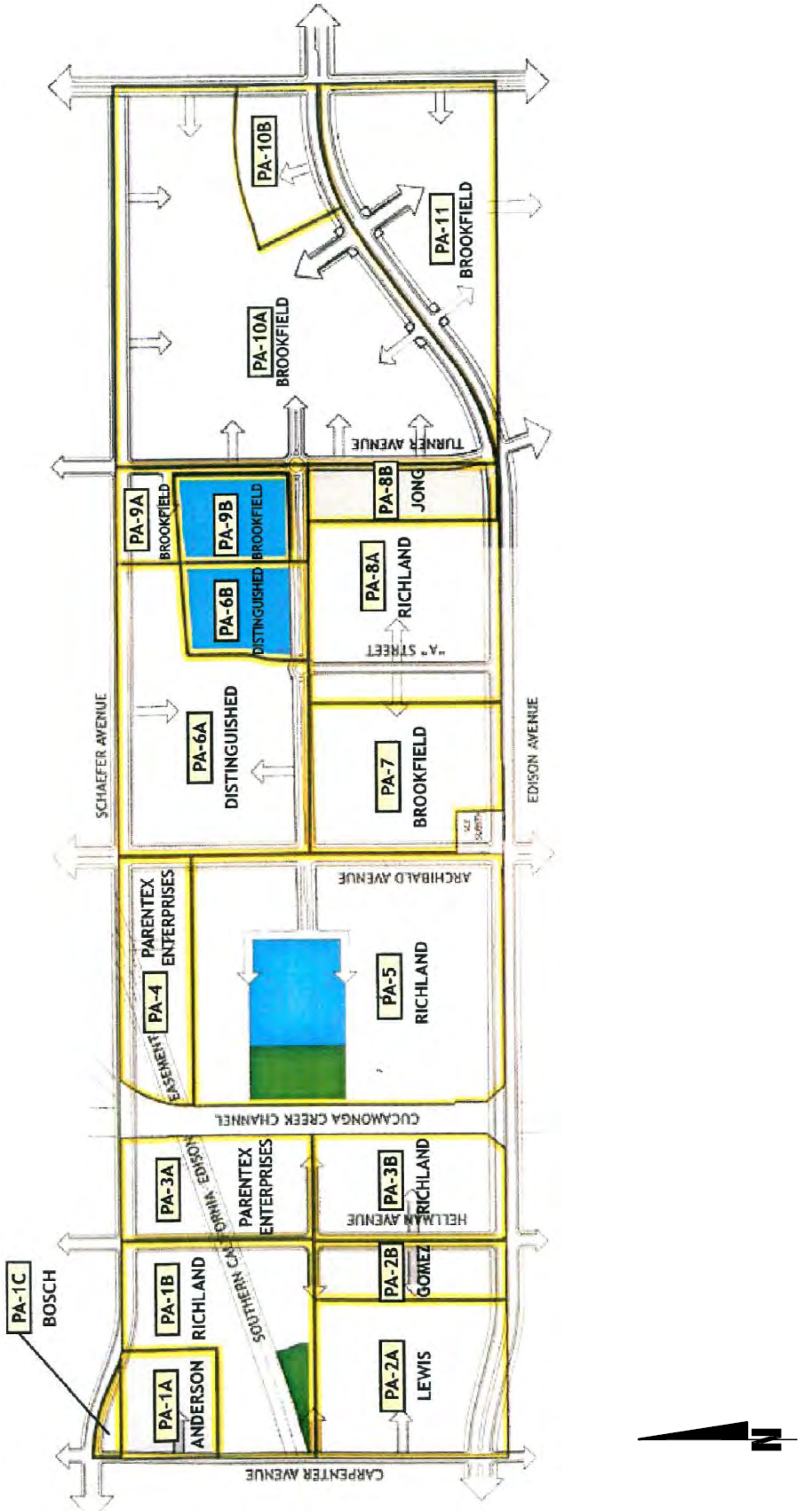


EXHIBIT 2-B

THE AVENUE PLANNING AREAS



3.0 EXISTING CONDITIONS

3.1 South Coast Air Basin

The project site is located in the South Coast Air Basin (SCAB) within the jurisdiction of SCAQMD. The SCAQMD was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the SCAQMD is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county Basin (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino Counties), and the Riverside County portions of the Salton Sea Air Basin and Mojave Desert Air Basin.

The Basin is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Los Angeles County portion of the Mojave Desert Air Basin is bound by the San Gabriel Mountains to the south and west, the Los Angeles / Kern County border to the north, and the Los Angeles / San Bernardino County border to the east. The Riverside County portion of the Salton Sea Air Basin is bound by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal non-attainment area (known as the Coachella Valley Planning Area) is a subregion of the Riverside County and Salton Sea Air Basin that is bound by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east.

3.2 Regional Climate

The regional climate significantly influences the air quality in the Basin. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality.

The annual average temperatures throughout the Basin vary from the low to middle 60° Fahrenheit (F). Due to a decreased marine influence, the eastern portion of the Basin shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the Basin, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the Basin have recorded maximum temperatures above 100°F.

Although the climate of the Basin can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of Basin climate. Humidity restricts visibility in the Basin, and the conversion of sulfur dioxide to sulfates is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the Basin is 71 percent along the coast and 59 percent inland. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. It should be noted that these effects decrease with distance from the coast.

More than 90 percent of the Basin's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the Basin with frequency being higher near the coast.

Due to its generally clear weather, about three-quarters of available sunshine is received in the Basin. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and on the longest day of the year there are approximately 14-1/2 hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the Basin is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the basin is the "Catalina Eddy," a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in costal sections.

In the Basin, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire Basin. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter, when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as NO_X and CO from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

3.3 Wind Patterns and Project Location

The distinctive climate of the project area and the SCAB is determined by its terrain and geographical location. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter.

Wind patterns across the south coastal region are characterized by westerly and southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season.

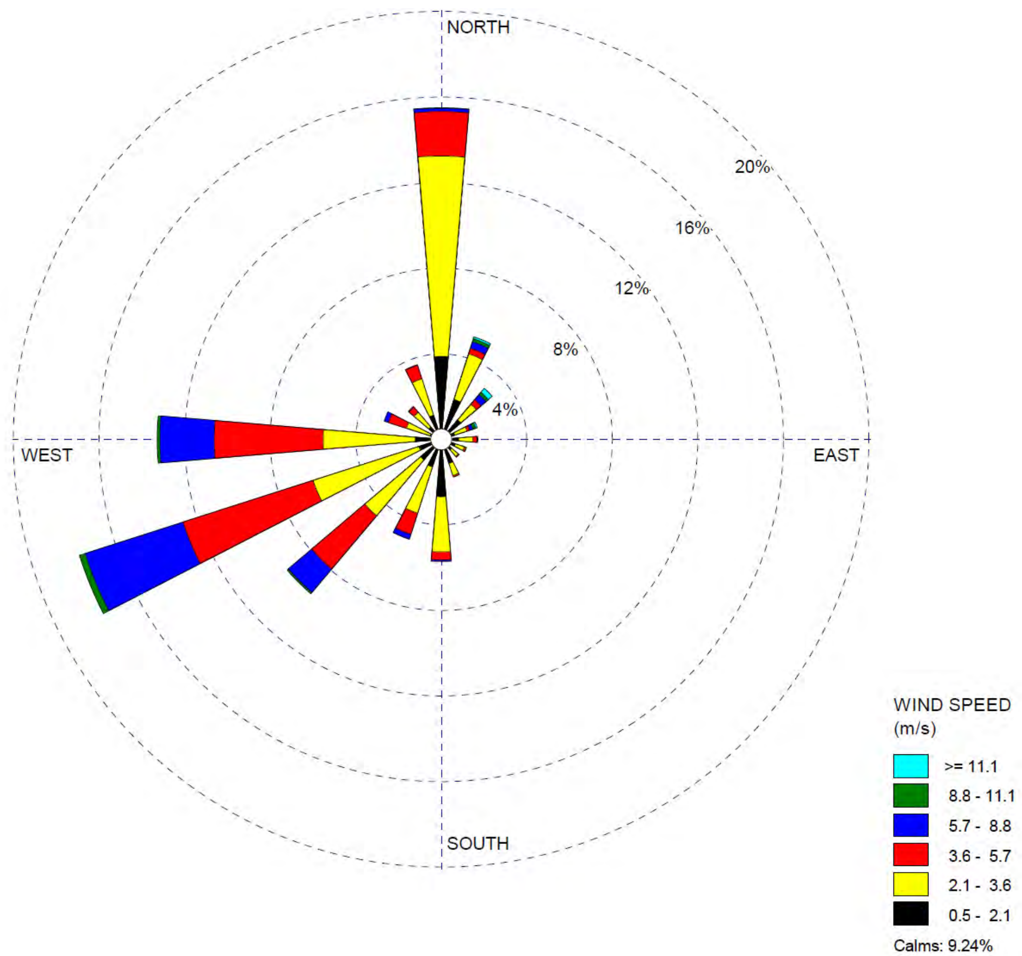
Meteorological data for the project area was obtained from the Ontario monitoring station, located approximately 3.3 northwest of the project site. As shown in the following wind rose exhibit, the prevailing winds move predominately from the southwest to the northwest with an average wind speed of 3.35 meters per second (m/s). Meteorological data from the Ontario monitoring station was used to be representative of the project area. Meteorological data was available for use by the SCAQMD on their website (http://www.aqmd.gov/smog/metdata/ MetDataTable1.html).

EXHIBIT 3-A

WIND ROSE

WIND ROSE PLOT:
Ontario Monitoring Station

DISPLAY:
Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD: **1972** **Jan 1 - Dec 31** **00:00 - 23:00**	COMPANY NAME: **Urban Crossroads, Inc.**	
		MODELER: **M.T.**	
	CALM WINDS: **9.24%**	TOTAL COUNT: **8784 hrs.**	
	AVG. WIND SPEED: **3.35 m/s**	DATE: **9/5/2008**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

3.4 Existing Air Quality

Existing air quality is measured based upon ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. Those standards currently in effect for both California and federal air quality standards are shown in Table 3-1.

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the state standards and federal standards presented in Table 3-1. The air quality in a region is considered to be in attainment by the state if the measured ambient air pollutant levels for O_3, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are not equaled or exceeded at any time in any consecutive three-year period; and the federal standards (other than O_3, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not exceeded more than once per year. The O_3 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 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. See Table 3-2 for attainment designations.

3.5 Regional Air Quality

The SCAQMD monitors levels of various criteria pollutants at 30 monitoring stations throughout the air district. In 2006 the federal and state standards for ozone at most monitoring locations exceeded threshold on one or more days. No areas of the Basin exceeded federal or state standards for NO_2, SO_2, CO, sulfates or lead.

TABLE 3-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards		Federal Standards			Most Relevant Effects
		Concentration	Method	Primary	Secondary	Method	
Ozone (O_3)	1 Hour	0.09 ppm (180 $\mu g/m^3$)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry	(a) Short-term exposures: (I) Pulmonary function decrements and localized lung edema in humans and animals. (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage
	8 Hour	0.070 ppm (137 $\mu g/m^3$)		0.075 ppm (147 $\mu g/m^3$)			
Respirable Particulate Matter (PM_{10})	24 Hour	50 $\mu g/m^3$	Gravimetric or Beta Attenuation	150 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	(a) Excess deaths for short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children; (c) Increased risk of premature death from heart or lung diseases in elderly
	Annual Arithmetic Mean	20 $\mu g/m^3$		-			
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	12 $\mu g/m^3$	Gravimetric or Beta Attenuation	15 $\mu g/m^3$			
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)			
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		-	-	-	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 $\mu g/m^3$)	Gas Phase Chemiluminescence	0.053 ppm (100 $\mu g/m^3$)	Same as Primary Standard	Gas Phase Chemiluminescence	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration
	1 Hour	0.18 ppm (339 $\mu g/m^3$)		-			
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm (80 $\mu g/m^3$)	-	Spectrophotometry (Pararosaniline Method)	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
	24 Hour	0.04 ppm (105 $\mu g/m^3$)		0.14 ppm (365 $\mu g/m^3$)	-		
	3 Hour	-		-	0.5 ppm (1300 $\mu g/m^3$)		
	1 Hour	0.25 ppm (655 $\mu g/m^3$)		-	-	-	
Lead	30 Day Average	1.5 $\mu g/m^3$	Atomic Absorption	-	-	-	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction
	Calendar Quarter	-		1.5 µg/m3	Same as Primary Standard	High Volume Sampler and Atomic Absorption	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer - visbility of ten miles or more (0.07 - 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and transmittance through Filter Tape		No Federal Standards			Visibility impairment on days when relative humidity is less than 70 percent
Sulfates	24 Hour	25 $\mu g/m^3$	Ion Chromatography				(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu g/m^3$)	Ultraviolet Fluorescence				
Vinyl Chloride	24 Hour	0.01 ppm (26 $\mu g/m^3$)	Gas Chromatography				

[1]Source: California Air Resources Board (6/26/08)

* For reader's convenience in picking out standards quickly, concentration appears first; e.g. "0.12 ppm, 1-hr avg.>" means 1hr-avg. > 0.12ppm.

**There is no separate 24-hour PM 2.5 standard in California; however, the U.S. EPA promulgated a 24-hour PM 2.5 ambient air quality standard of 35 µg/m3.

TABLE 3-2

ATTAINMENT STATUS

Criteria Pollutant	State Designation	Federal Designation
Ozone - 1hour standard	Extreme Nonattainment	Revoked June 2005
Ozone - 8 hour standard	Extreme Nonattainment	Nonattainment
PM_{10}	Serious Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment[a]
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
All others	Attainment/Unclassified	Attainment

Source: California Air Resources Board, Attainment Designation Fact Sheets, January 2006

[a] The USEPA granted the request to redesignate the SCAB from nonattainment to attainment for the CO NAAQS on May 11, 2007 (Federal Register Volume 71, No. 91), which became effective as of June 11, 2007

3.6 Local Air Quality

The nearest long-term air quality monitoring site in relation to the project for Inhalable Particulates (PM_{10}) and Ultra-Fine Particulates ($PM_{2.5}$) is carried out by the South Coast Air Quality Management District (SCAQMD) at the Southwest San Bernardino Valley monitoring station located approximately 3.3 miles northwest of the project site. Data for Ozone (O_3), Carbon Monoxide (CO), and Nitrogen Dioxide (NO_2) was obtained from the Mira Loma monitoring station located approximately 4.0 miles east of the project site. It should be noted that the Mira Loma monitoring station was utilized in lieu of the Southwest San Bernardino Valley monitoring station only where data was not available from the nearest monitoring site. The 3 years of data in Table 3-3 shows the number of days standards were exceeded for the study area. Data for SO_2 has been omitted as attainment is regularly met in the South Coast Air Basin and few monitoring stations measure SO_2 concentrations. In addition, Exhibit 3-B presents the location of air quality monitoring stations in relation to the project site.

3.7 Emission Trends and Forecasts (South Coast Air Basin)

Population and the vehicle miles traveled (VMT) has been growing since 1980 and is expected to grow through 2020. While high growth rates are typically linked to increases in emissions and pollutant concentrations, aggressive emission control programs in the SCAB have resulted in emission decreases and a continuing improvement in air quality (ARB Almanac 2007, CARB).

3.8 Regulatory Background

3.8.1 Federal Regulations

The U.S. Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for oxidants (O_3), CO, $NO_{x,}$ SO_2, PM_{10}, and lead. The U.S. EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The U.S. EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of the California Air Resources Board (CARB).

TABLE 3-3

PROJECT AREA AIR QUALITY MONITORING SUMMARY 2005-2007

SOUTHWEST SAN BERNARDINO VALLEY (SRA 33) AND MIRA LOMA (SRA 23) AIR MONITORING STATION DATA[a]

POLLUTANT	STANDARD	YEAR		
		2005	2006	2007
Ozone (O_3)[b]				
Maximum 1-Hour Concentration (ppm)		0.135	0.160	0.118
Maximum 8-Hour Concentration (ppm)		0.116	0.119	0.104
Number of Days Exceeding State 1-Hour Standard	> 0.09 ppm	34	39	16
Number of Days Exceeding State 8-Hour Standard	> 0.07 ppm	51	48	48
Number of Days Exceeding Federal 1-Hour Standard	> 0.12 ppm	3	4	0
Number of Days Exceeding Federal 8-Hour Standard	> 0.08 ppm	25	25	10
Number of Days Exceeding Health Advisory	≥ 0.15 ppm	0	1	0
Carbon Monoxide (CO)[b]				
Maximum 1-Hour Concentration (ppm)		3	4	3
Maximum 8-Hour Concentration (ppm)		2.1	2.7	2.1
Number of Days Exceeding State 1-Hour Standard	> 20 ppm	0	0	0
Number of Days Exceeding Federal / State 8-Hour Standard	> 9.0 ppm	0	0	0
Number of Days Exceeding Federal 1-Hour Standard	> 35 ppm	0	0	0
Nitrogen Dioxide (NO_2)[b]				
Maximum 1-Hour Concentration (ppm)		0.08	0.08	0.07
Annual Arithmetic Mean Concentration (ppm)		0.016	0.0194	0.018
Number of Days Exceeding State 1-Hour Standard	> 0.25 ppm	0	0	0
Inhalable Particulates (PM_{10})				
Maximum 24-Hour Concentration ($\mu g/m^3$)		74	78	115
Number of Samples		60	62	58
Number of Samples Exceeding State Standard	> 50 $\mu g/m^3$	19	17	14
Number of Samples Exceeding Federal Standard	> 150 $\mu g/m^3$	0	0	0
Ultra-Fine Particulates ($PM_{2.5}$)				
Maximum 24-Hour Concentration ($\mu g/m^3$)		87.8	53.7	72.8
Annual Arithmetic Mean ($\mu g/m^3$)		18.8	18.5	17.9
Number of Samples Exceeding Federal 24-Hour Standard	> 65 $\mu g/m^3$	1	0	1

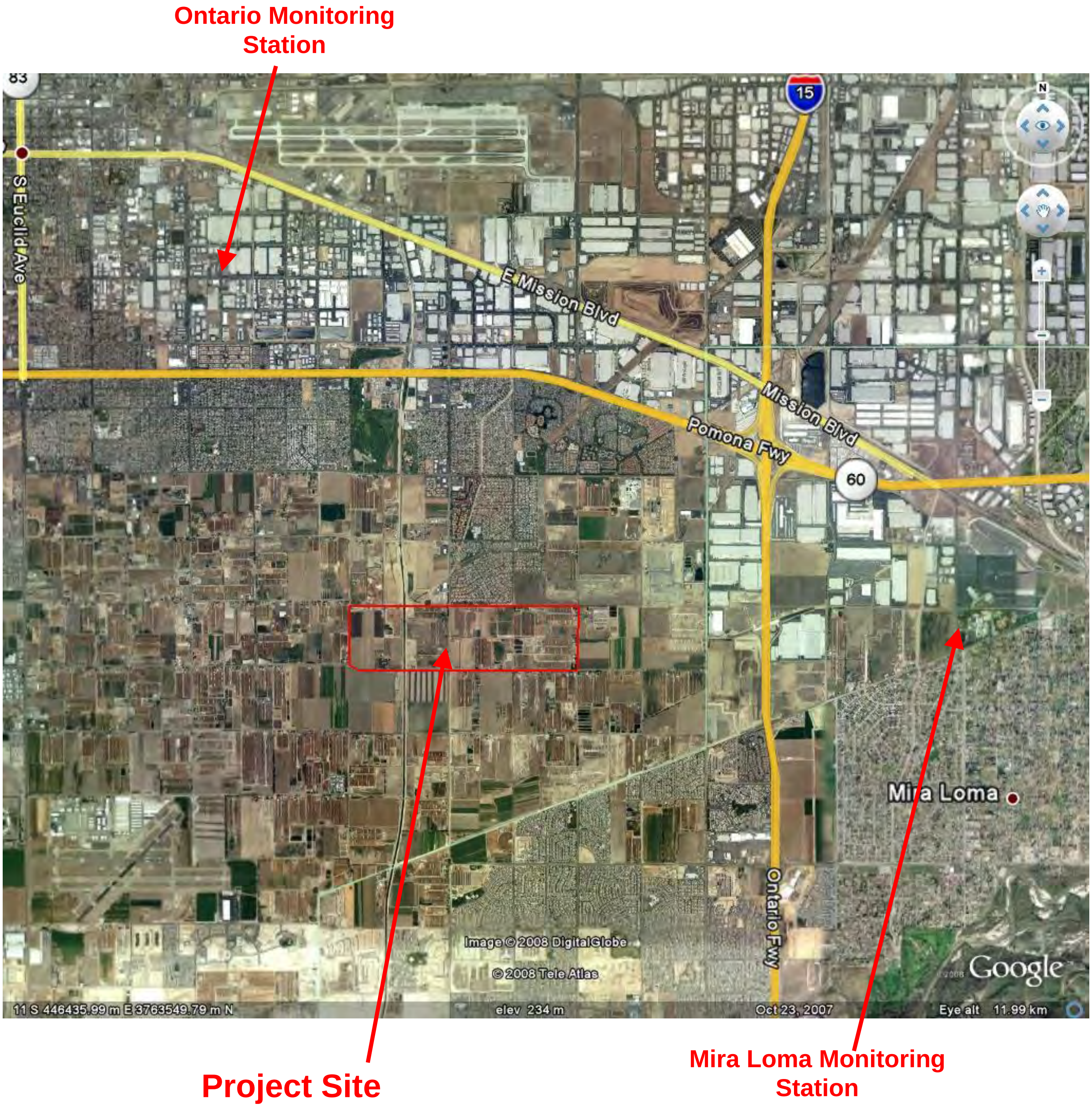
[a] Southwest San Bernardino Valley Monitoring Station used unless otherwise noted.

[b] Mira Loma Monitoring Station data

Source: South Coast AQMD (www.aqmd.gov)

EXHIBIT 3-B

AIR QUALITY MONITORING STATION LOCATIONS



The Federal Clean Air Act (CAA) was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). As discussed above, the CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance. The CAA also mandates that states submit and implement State Implementation Plans (SIPs) for local areas not meeting these standards. These Plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions).

Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O_3, NO_2, SO_2, PM_{10}, CO, $PM_{2.5}$, and lead. The NAAQS were amended in July 1997 to include an additional standard for O_3 and to adopt a NAAQS for $PM_{2.5}$. Table 3-1 (previously presented) provides the NAAQS within the basin.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and nitrogen oxides (NO_x). NO_x is a collective term that includes all forms of nitrogen oxides (NO, NO_2, NO_3) which are emitted as byproducts of the combustion process.

3.8.2 California Regulations

The CARB, which became part of the California EPA in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. The California CAA mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. The CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However at this time, hydrogen sulfide and vinyl chloride are not measured at any monitoring stations in the Basin because they are not considered to be a regional air quality problem. It should also be noted that the CAAQS are generally more stringent than the NAAQS.

Local air quality management districts, such as the SCAQMD, regulate air emissions from commercial and light industrial facilities. All air pollution control districts have been formally designated as attainment or non-attainment for each CAAQS.

Serious non-attainment areas are required to prepare air quality management plans that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development);
- A District permitting systems designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a five percent or more annual reduction in emissions or 15 percent or more in a period of three years for ROCs, NO_x, CO and PM_{10}. However, air basins may use alternative emission reduction strategy which achieves a reduction of less than five percent per year under certain circumstances.

4.0 PROJECT AIR QUALITY IMPACT

4.1 Introduction

The project has been evaluated to determine if it will violate an air quality standard or contribute to an existing or projected air quality violation. Additionally, the proposed project has been evaluated to determine if it will result in a cumulatively considerable net increase of a criteria pollutant for which the project area is designated as non-attainment under an applicable Federal or State ambient air quality standard. The significance of these potential impacts is described in the following section.

4.2 Standards of Significance

The criteria used to determine the significance of potential project-related air quality impacts are taken from the Initial Study Checklist in Appendix G of the State CEQA Guidelines (14 California Code of Regulations §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would:

(1) Conflict with or obstruct implementation of the applicable air quality plan

(2) Violate any air quality standard or contribute to an existing or projected air quality violation.

(3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).

(4) Expose sensitive receptors to substantial pollutant concentrations.

(5) Create objectionable odors affecting a substantial number of people.

In addition, based on the SCAQMD's CEQA Air Quality Handbook, 1993, project impacts would be significant if they exceed the following California standards for localized CO concentrations:

- 1-hour CO standard of 20.0 parts per million (ppm)
- 8-hour CO standard of 9.0 ppm.

The SCAQMD has also developed significance thresholds based on the volume of each pollutant emitted. The SCAQMD's CEQA Air Quality Significance Thresholds (December 2007) indicate that any projects in the District with daily emissions that exceed any of the following thresholds should be considered as having an individually and cumulatively significant air quality impact. See Table 4-1 for a summary of daily emissions threshold set forth by the SCAQMD.

TABLE 4-1

MAXIMUM DAILY EMISSIONS THRESHOLDS		
Pollutant	**Construction**	**Operational**
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
AMBIENT AIR QUALITY FOR CRITERIA POLLUTANTS (LOCALIZED THRESHOLDS)		
NO_2		
1-hour average (state)	0.18 ppm	
annual average (state)	0.030 ppm	
PM_{10}		
24-hour average (construction)	10.4 $\mu g/m^3$	
24-hour average (operations)	2.5 $\mu g/m^3$	
$PM_{2.5}$		
24-hour average (construction)	10.4 $\mu g/m^3$	
24-hour average (operations)	2.5 $\mu g/m^3$	
CO		
1-hour average	20.0 ppm	
8-hour average	9.0 ppm	

4.3 Project-Related Sources of Potential Impact

Land uses such as those proposed for the project impact air quality predominately through emissions associated with vehicular travel. Trip generation rates and characteristics were available from the report, The Avenue Specific Plan Amendment Traffic Impact Study (Urban Crossroads, Inc., August 27, 2008). It should be noted that for the purposes of this analysis, the operational emissions analysis considers only the emissions resulting from the incremental increase in project land uses. However, because grading and other assumptions have been refined since the preparation of the previous air study, the construction emissions analysis in this report analyzes the emissions resulting from the construction of the project in its entirety.

Rimpo and Associates, in association with various air districts (including SCAQMD) throughout California, has developed the Urban Emissions (URBEMIS) 2007 (version 9.2.4), land use and air pollution emissions computer model that is used to calculate the daily emissions increase associated with a proposed project. The URBEMIS 2007 model was used to forecast emissions levels for project construction and operational activity. Output from the model runs for both construction and operational scenarios are provided in Appendix “A” and “B”, respectively.

4.4 Construction Emissions

Construction activities associated with the proposed project will result in emissions of CO, VOCs, NO_x, SO_x, PM_{10}, and $PM_{2.5}$. Construction related emissions are expected from the following construction activities:

- Demolition
- Grading
- Paving
- Building Construction
- Architectural Coatings
- Construction Workers Commuting

In order to represent worst-case conditions, it is assumed for purposes of this analysis that overlap will occur during the underground utility construction, paving, building construction, and architectural coating phases of project construction.

It should be noted that since the assumptions utilized in the construction analysis have changed following the preparation of the previous air study, the construction scenario analyzed in this report represents emissions resulting from the construction of the project as a whole, and is not limited to the incremental increase in residential and commercial land uses.

4.4.1 Demolition

In addition to standard heavy equipment necessary for construction and grading activity of the proposed project, there will be demolition and removal of existing building structures and removal of organic waste. Based on discussion with the project team a “worst-case” scenario encompassing an approximate four (4) month period of a portion of the demolition activities was analyzed. Construction equipment will likely include the following:

Demolition Equipment		
Description	**Qty**	**Hours/day**
Crushing/Processing Equipment	1	8
Dozers	2	8
Tractors/Loaders/Backhoes	4	8
Water Trucks	4	8

4.4.2 Grading

Exhaust emissions from grading activity result from both on-road and off-road heavy equipment operating during this phase of construction. Construction equipment will likely include the following:

Grading Equipment		
Description	**Qty**	**Hours/day**
Scrapers	12	8
Rough Terrain Forklifts	4	8
Rubber Tired Dozers	6	8
Other Equipment	18	8
Water Trucks	4	8

Dust is typically a major concern during rough grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions". Emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). Fugitive dust emissions were calculated based on information provided by the project applicant that up to 50 acres would be actively graded per day, and up to 50,000 cubic yards of cut and fill will occur during project grading. Additionally, it is estimated that approximately 292,000 cubic yards of soil and manure will be exported during grading activities.

4.4.3 Underground Utility Construction

Exhaust emissions will result from heavy equipment that will be operational during underground utility construction. The types of activities that generally take place may include general trench-work, pipe laying with associated base material and cover, ancillary earthwork, manholes, etc. This activity is assumed to take place concurrently with paving, building construction, and architectural coating over a period of approximately fifteen months. Construction equipment will likely include the following:

Underground Utility Construction Equipment		
Description	**Qty**	**Hours/day**
Concrete/Industrial Saws	4	8
Rough Terrain Forklifts	4	8
Trenchers	3	8
Tractors/Loaders/Backhoes	9	8
Water Trucks	3	8

4.4.4 Paving

Paving activities include the movement of any remaining material as well as necessary curb and gutter work, road base material placement and blacktop. It is estimated that a total of 32 acres will be paved during this phase of construction over a period of approximately nine months. Construction equipment will likely include the following:

Paving Equipment		
Description	**Qty**	**Hours/day**
Graders	6	8
Off-Hwy Trucks	6	8

Pavers	6	8
Paving Equipment	6	8
Rollers	13	8

4.4.5 Building Construction

Building construction activity will result in emissions from heavy equipment that will be operational during physical building construction. Construction equipment will likely include the following:

Building Construction Equipment		
Description	**Qty**	**Hours/day**
Forklifts	3	8
Tractors/Loaders/Backhoes	3	8
Cranes	1	8
Generator Sets	1	8
Welders	1	8

4.4.6 Architectural Coatings

The application of architectural surface coatings (painting) generates VOC emissions when organic solvents in the coating evaporate as the coating dries. Emissions resulting from the application of architectural coatings were estimated using the URBEMIS 2007 model.

4.4.7 Construction Workers Commuting

Construction emissions for construction worker vehicles traveling to and from the project site were estimated using the URBEMIS 2007 model, which generally assumes 1.25 construction workers for each piece of equipment active during each phase.

4.4.8 Construction Emission Summary

Assuming a "worst case" scenario for construction activity, the estimated maximum daily construction emissions are summarized on Table 4-2. Additionally, detailed calculations are presented in Appendix "A". Under the assumed worst case conditions, emissions resulting from project construction will exceed criteria pollutant thresholds established by the SCAQMD for emissions of VOCs, NO_X, CO, PM_{10}, and $PM_{2.5}$. Section 5.0 of this report provides mitigation measures to reduce emissions to the maximum extent possible.

4.5 Operational Emissions Impacts

Operational activities associated with the proposed project will result in emissions of VOCs, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. Operational emissions would be expected from the following equipment and activities:

- Vehicle emissions
- Fugitive dust related to vehicular travel
- Combustion emissions associated with natural gas use
- Landscape maintenance equipment emissions
- Architectural coatings

4.5.1 Vehicle Emissions

Project operational (vehicular) impacts are dependent on both overall daily vehicle trip generation and the effect of the project on peak hour traffic volumes and traffic operations in the vicinity of the project. The project related operational air quality impact centers primarily on the increase of approximate 3,272 net vehicle trips generated by the increased land uses proposed by the project. Trip characteristics available from the report, The Avenue Specific Plan Amendment Traffic Impact Study (Urban Crossroads, Inc., August 27, 2008) were utilized in this analysis. Overall project daily emissions are evaluated first, followed by analysis of the potential peak hour "micro-scale" air quality impacts of the project (i.e. CO "hot spot" analysis).

4.5.2 Fugitive Dust Related to Vehicular Travel

Vehicles traveling on paved roads would be a source of fugitive emissions due to the generation of road dust. The emissions estimates for travel on paved roads were calculated using the URBEMIS 2007 model.

TABLE 4-2

EMISSIONS SUMMARY OF CONSTRUCTION ACTIVITIES (POUNDS PER DAY) (WITHOUT MITIGATION)

Construction Activity	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Demolition						
Fugitive Dust	0	0	0	0	101.64	21.14
Off Road Equipment Emissions	10.04	84.20	39.35	0	4.37	4.02
On Road Equipment Emissions	11.46	161.20	59.74	0.18	7.39	6.43
Worker Commute	0.12	0.22	3.56	0.00	0.03	0.01
Peak Day Mass Emissions	**21.62**	**245.62**	**102.65**	**0.18**	**113.43**	**31.60**
SCAQMD Regional Threshold	75	100	550	150	150	55
Significant?	**NO**	**YES**	**NO**	**NO**	**NO**	**NO**

Construction Activity	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Grading						
Fugitive Dust	0	0	0	0	6,400.00	1,336.58
Off Road Equipment Emissions	48.44	462.90	202.17	0	19.13	17.60
On Road Equipment Emissions	15.98	224.03	81.61	0.26	9.97	8.62
Worker Commute	0.43	0.79	13.17	0.01	0.11	0.06
Peak Day Mass Emissions	**64.85**	**687.72**	**296.95**	**0.27**	**6,429.21**	**1,362.86**
SCAQMD Regional Threshold	75	100	550	150	150	55
Significant?	**NO**	**YES**	**NO**	**NO**	**YES**	**YES**

Construction Activity	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Underground Utility Construction						
Equipment Emissions	11.21	75.2	42.64	0	5.90	5.43
Worker Commute	0.18	0.34	5.86	0.01	0.06	0.03
Paving						
Off-Gas Emissions	3.65	0.00	0	0	0	0
Off-Road Equipment Emissions	29.76	213.29	104.89	0	13.83	12.72
On-Road Equipment Emissions	1.03	13.79	5.05	0.02	0.61	0.51
Worker Commute	0.30	0.55	9.42	0.01	0.09	0.05
Building Construction						
Off-Road Equipment	5.08	46.65	19.88	0	2.20	2.03
Vendor Trips	5.39	62.81	50.56	0.13	2.98	2.47
Worker Commute	11.41	21.19	364.59	0.47	3.48	1.92
Architectural Coating						
Architectural Coatings	126.75	0	0	0	0	0
Worker Commute	0.16	0.29	4.98	0.01	0.05	0.03
Peak Day Mass Emissions	**194.92**	**434.11**	**607.87**	**0.65**	**29.20**	**25.19**
SCAQMD Regional Threshold	75	100	550	150	150	55
Significant?	**YES**	**YES**	**YES**	**NO**	**NO**	**NO**

Source: URBEMIS 2007 v. 9.2.4

4.5.3 Combustion Emissions Associated with Natural Gas Use

Combustion emissions would be generated by the use of natural gas in the development. The emissions associated with natural gas use were calculated using the URBEMIS 2007 model.

4.5.4 Landscape Maintenance Emissions

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shedders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the development. Due to the generally mild climate of the project area, it is conservatively estimated that landscape maintenance emissions will occur year-round. The emissions associated with landscape maintenance equipment were calculated using the URBEMIS 2007 model.

4.5.5 Architectural Coatings

It is assumed that over a period of time the buildings that are part of this project will be subject to emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings as part of project maintenance. The emissions associated with architectural coatings were calculated using the URBEMIS 2007 model.

4.5.6 Operations Emissions Summary

The project-related operations emissions summary, along with a comparison of SCAQMD recommended significance thresholds, are presented in Table 4-3. Additionally, detailed emissions calculations are provided in Appendix “B”. The project related emissions levels for operational emissions will not exceed the regional criteria pollutant thresholds established by the SCAQMD. It should be noted that the emissions summarized in Table 4-3 represent those generated by the incremental increase in land uses only. Section 5.0 of this report provides mitigation measures to reduce emissions to the maximum extent possible.

TABLE 4-3

SUMMARY OF PEAK OPERATIONAL EMISSIONS (SUMMER) (POUNDS PER DAY) (WITHOUT MITIGATION)

Operational Activities	**VOC**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Vehicle Emissions	21.74	30.95	245.27	0.35	54.74	10.86
Natural Gas Use	0.35	4.62	2.17	0	0.01	0.01
Landscape Maintenance Emissions	0.75	0.07	5.86	0	0.02	0.02
Consumer Products	14.67	0	0	0	0	0
Architectural Coatings	1.05	0	0	0	0	0
Operational Emissions	**38.56**	**35.64**	**253.30**	**0.35**	**54.77**	**10.89**
SCAQMD Regional Threshold	55	55	550	150	150	55
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

SUMMARY OF PEAK OPERATIONAL EMISSIONS (WINTER) (POUNDS PER DAY) (WITHOUT MITIGATION)

Operational Activities	**VOC**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Vehicle Emissions	23.48	36.77	237.32	0.29	54.74	10.86
Natural Gas Use	0.35	4.62	2.17	0	0.01	0.01
Landscape Maintenance Emissions	0.75	0.07	5.86	0	0.02	0.02
Fireplace Emissions	0.10	1.75	0.75	0	0.14	0.14
Consumer Products	14.67	0	0	0	0	0
Architectural Coatings	1.05	0	0	0	0	0
Operational Emissions	**40.40**	**43.21**	**246.10**	**0.30**	**54.91**	**11.03**
SCAQMD Regional Threshold	55	55	550	150	150	55
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Source: URBEMIS 2007 v 9.2.4 model outputs

4.6 Localized Significance

Localized Significance thresholds (LSTs) were developed in response to the Governing Board's Environmental Justice Enhancement Initiative I-4. The LST methodology was provisionally adopted by the Governing Board in October 2003.

LSTs are only applicable to the following criteria pollutants: NO_2, CO, PM_{10}, and $PM_{2.5}$. LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. For PM_{10} LSTs were derived based on requirements in SCAQMD Rule 403 – Fugitive Dust.

According to the manual Final Localized Significance Threshold Methodology (SCAQMD, June 2003) and the SCAQMD website, the use of LSTs is voluntary, to be implemented at the discretion of local public agencies acting as a lead agency pursuant to the California Environmental Quality Act (CEQA). However, based on discussion with SCAQMD staff, an LST analysis is strongly recommended for all projects pursuant to CEQA. The LST screening tables would only apply to projects that must undergo an environmental analysis pursuant to CEQA or the National Environmental Policy Act (NEPA) and are five acres or less. It is recommended that proposed projects larger than five acres in area undergo air dispersion modeling to determine localized air quality. As such, dispersion modeling was performed for this project.

Pollutant emissions are considered to have a significant effect on the environment if they result in concentrations that create either a violation of an ambient air quality standard, contribute to an existing air quality violation or expose sensitive receptors to substantial pollutant concentrations. Should ambient air quality already exceed existing standards, the SCAQMD has established specific significance criteria to account for the continued degradation of local air quality.

For PM_{10} emissions, background concentrations in the project area occasionally exceed the CAAQS for the PM_{10} 24-hour averaging time. As a result, a significant impact is achieved when pollutant concentrations produce a measurable change over existing background concentrations. Background concentrations are based upon the highest observed value for the most recent three year period. For NO_2 and CO, background concentrations are below the current air quality standards. As such, significance is achieved when pollutant concentrations add to existing levels and create an exceedance of the CAAQS. Table 3-3 (presented previously) shows the pollutant concentrations collected at the nearest monitoring stations for CO, NO_2, PM_{10}, and $PM_{2.5}$ where data for the last three years is available.

4.6.1 Construction Localized Emissions

In order to estimate localized pollutant concentrations resulting from project construction, the SCAQMD-approved Industrial Source Complex – Short Term (ISCST3) dispersion model was utilized. The modeling approach utilized is discussed as follows:

Sources

Based on discussion with the project applicant construction activity is anticipated to disturb an area of no more than 50 acres on any given day, thus it was conservatively estimated that emissions would be concentrated over this area. It should be noted that in order to model worst-case conditions, the highest daily peak emissions resulting from construction activity were utilized.

In order to model fugitive dust emissions (PM_{10} and $PM_{2.5}$) resulting from project grading activity, an area source of 50 acres was utilized. Per SCAQMD LST methodology, a ground level release height and a 1 meter initial vertical dimension (sigma z) were utilized in order to account for the vertical spread of emissions. Additionally, dry depletion parameters consistent with LST methodology were utilized.

In order to account for equipment exhaust emissions of PM_{10}, $PM_{2.5}$, NO_2, and CO, a total of 121 volume sources measuring 40 meters by 40 meters were spread over an area of approximately 50 acres. In order to represent equipment exhaust emissions, a release height of 5.0 meters (consistent with LST methodology) was utilized. Additionally, it should be noted that in order to account for the gradual conversion of NO_X to NO_2 as a function of distance, a conservative NO_X to NO_2 ratio of 0.074 was utilized (representing a worst-case distance of 100 meters), consistent with SCAQMD LST methodology.

Receptors

To account for sensitive receptors near construction areas, receptors were utilized in the ISCST3 model, and placed surrounding the 50 acre area source. Receptors were conservatively placed at a distance of 50 meters in order to account for sensitive receptors in the project vicinity. Please see Exhibit 4-A (presented later in this report) for the specific locations of sensitive receptors located near the project site.

Specifically, in order to estimate concentrations of PM_{10} and $PM_{2.5}$ resulting from fugitive dust, receptors were placed at the project fenceline, and the SCAQMD-approved downwind distance equation ($C_x = 0.9403\ C_0\ e^{-0.0462\ X}$) was utilized.

- C_x is the predicted PM_{10} concentration at X meters from the fence line
- C_0 is the PM_{10} concentration at the fence line as estimated by SCREEN3
- e is the natural logarithm
- X is the distance in meters from the fence line to the nearest sensitive receptor (for purposes of this analysis it is estimated that the nearest sensitive receptor is conservatively located 50 meters from the project boundary)

For equipment exhaust emissions of CO, NO_2, PM_{10}, and $PM_{2.5}$, receptors were conservatively placed surrounding the 50 acre daily disturbance area at a distance of 50 meters. Per model guidance, a flagpole receptor height of two meters was utilized.

Meteorological Data and Other Model Options

In order to account for meteorological conditions at the project site, data from the Ontario monitoring station (located approximately 3.3 miles northwest of the project site) was utilized, as this is the closest station to the project site for which meteorological data is available. Deposition meteorological data from the Upland monitoring station (located approximately 7.4 miles north of the project site) was utilized, as this is the nearest location for which data is available.

Additionally, per SCAQMD LST methodology, the NOCALM option was selected, and the urban dispersion coefficient was utilized.

4.6.2 Operational Localized Emissions

Since localized operational emissions concentrations are generally nominal and due to the geometric layout of the site, a screening level analysis was conducted as a conservative measure; as such, the SCREEN3 model was utilized in lieu of ISCST3. SCREEN3 is a U.S. EPA approved air quality model containing algorithms associated with the USEPA's Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, and uses dispersion screening techniques to estimate impacts of point, area, and volume stationary sources. This approach is consistent with the U.S. EPA's Community Air Screening How-To Manual, which recommends the use of a screening level model (such as SCREEN3) first, as this level of analysis is highly conservative and therefore greatly overestimates pollutant concentrations. The use of a more refined model, such as ISCST3, is only recommended if emissions exceed localized thresholds using the screening level (SCREEN3) model.

For purposes of this analysis, receptors are conservatively assumed to be located 100 meters from the project boundary for emissions of CO, PM_{10}, and $PM_{2.5}$ to represent a conservative, "worst case" scenario. For emissions of NO_2 discrete receptors were placed at 20, 50, 70, 100, 200, 500, 1000, 2000, 3000, 4000, and 5000 meters from the fence-line of the project site to account for the change in NO_X to NO_2 conversion as a function of distance.

It should be noted that for PM_{10} / $PM_{2.5}$ (fugitive dust only) a discrete receptor was placed at the facility fence-line and the SCAQMD—approved downwind distance equation ($C_x = 0.9403\ C_0\ e^{-0.0462\ X}$) was utilized.

- C_x is the predicted PM_{10} concentration at X meters from the fence line
- C_0 is the PM_{10} concentration at the fence line as estimated by SCREEN3
- e is the natural logarithm
- X is the distance in meters from the fence line to the nearest sensitive receptor (for purposes of this analysis it is estimated that the nearest sensitive receptor is conservatively located 50 meters from the project boundary)

In order to model localized emissions resulting from project operational activity, a site area of approximately 441 acres was utilized. The urban option of the model was selected, and receptor height was conservatively set at 2.0 meters (consistent with SCAQMD LST guidance). Per LST methodology, emissions of CO, NO_2, PM_{10}, and $PM_{2.5}$ resulting from vehicle exhaust and other combustion sources were assumed to be released at a height of 5.0 meters. Additionally, fugitive dust emissions of PM_{10} and $PM_{2.5}$, such as emissions occurring from road dust and brake and tire wear, were assumed to be released at a height of 1.0 meter. An emissions rate of 1 gram per second was utilized for all emissions (except NO_x) and the output in micrograms per cubic meter ($\mu g/m^3$) was then multiplied by the emissions rate determined from the URBEMIS 2007 model outputs. Since SCAQMD LST guidance states that off-site mobile emissions from the project should not be included in emissions compared to LSTs, the average trip rate in URBEMIS 2007 was changed to one mile in order to conservatively account for on-site activity only. A summary of calculations from both the SCREEN3 model output and calculations for the actual concentration for each pollutant are available for review in Appendix "C".

4.6.3 Localized Significance Threshold Analysis Summary

Table 4-4 presents the results of localized emissions during construction activity. Emissions resulting from project construction are expected to exceed localized thresholds established by the SCAQMD for emissions of PM_{10} and $PM_{2.5}$ (before mitigation). Section 5.0 of this report provides mitigation measures that will reduce emissions to the extent feasible. Additionally, detailed model outputs and calculations are available for review in Appendix "C".

Table 4-5 presents the results of the long-term operational LST analysis in tabular format for review. Results of the analysis indicate that long-term operational emissions do not exceed localized emissions thresholds established by the SCAQMD. See Appendix "C" for more details.

TABLE 4-4

LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION (WITHOUT MITIGATION)

Construction	**CO**		**NO_2**	**PM_{10}**	**$PM_{2.5}$**
Averaging Time	1-Hour	8-Hour	1-Hour	24-Hours (Construction)	
Peak Day Localized Emissions	0.306	0.009	3.16E-02	215.16	45.18
Background Concentration	4	2.7	0.08		
Total Concentration	**4.306**	**2.709**	**0.11**	**215.16**	**45.18**
SCAQMD Localized Significance Threshold	20	9	0.18	10.4	10.4
Significant?	**NO**	**NO**	**NO**	**YES**	**YES**

Note: PM_{10} and $PM_{2.5}$ concentrations are expressed in $\mu g/m^3$. All others are expressed in ppm.

TABLE 4-5

LOCALIZED SIGNIFICANCE SUMMARY OPERATIONS (WITHOUT MITIGATION)

Operations	CO		NO_X	PM_{10}	$PM_{2.5}$
	Averaging Time				
	1-Hour	8-Hour	1-Hour	24-Hours (Operations)	
Peak Day Localized Emissions	0.015	0.011	3.43E-05	0.04	0.03
Background Concentration	4	2.7	0.08		
Total Concentration	**4.015**	**2.711**	**0.08**	**0.04**	**0.03**
SCAQMD Localized Significance Threshold	20	9	0.18	2.5	2.5
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**

Note: PM_{10} and $PM_{2.5}$ concentrations are expressed in μg/m^3. All others are expressed in ppm.

4.7 Air Quality Management Planning

The project site is located within the SCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 12,000 square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the Southern California Association of Governments (SCAG), county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards.

Currently, these state and federal air quality standards are exceeded in most parts of the Basin. In response, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

SCAQMD 2003 AQMP

The purpose of the 2003 AQMP for the SCAB (and those portions of the Salton Sea Air Basin under the SCAQMD's jurisdiction) is to set forth a comprehensive program that will lead these areas into compliance with all federal and state air quality planning requirements. Specifically, the 2003 AQMP is designed to satisfy the California Clean Air Act tri-annual update requirements and fulfill the SCAQMD's commitment to update transportation emission budgets based on the latest approved motor vehicle emissions model and planning assumptions. The 2003 AQMP has been approved by CARB, and it has been submitted to the U.S. EPA for review and has been approved as a SIP revision.

Success of the 2003 AQMP requires the cooperation of all levels of government: local, regional, state, and federal. Each level is represented in the 2003 AQMP by the appropriate agency or jurisdiction that has the authority over specific emissions sources, and for which each has specific planning and implementation responsibilities.

The overall control strategy for the 2003 AQMP is designed to meet applicable state and federal requirements, including attainment with ambient air quality standards. The focus of the 2003 AQMP is to demonstrate attainment with the federal PM_{10} ambient air quality standard by 2006, and with the federal 1-hour ozone standard in 2010, while making expeditious progress toward attainment of state standards and upcoming new federal standards. Although the 2003 AQMP does not specifically address the updated federal 8-hour ozone and $PM_{2.5}$ standards, it is designed to make continued progress toward meeting these standards. The 2003 AQMP relies upon the most recent planning assumptions and the best available information, such as CARB's EMFAC2002 for on-road mobile source emissions inventory, CARB's off-road model for off-road mobile source emission inventory, latest point source and improved area source inventories, as well as the use of the 1997 O_3 episodes, expanded air quality modeling analysis, and SCAG's forecast assumptions based on its 2001 RTP.

The 2003 AQMP was prepared to ensure compliance with the federal O_3 and PM_{10} standards, to accommodate growth, to reduce the high levels of criteria pollutants within the SCAB, to meet state and federal air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. Principal control policies and measures for improving the SCAB's air quality include extensive use of clean fuels, transportation control measures, market incentives, and facility permitting. Many of these policies and measures have been adopted as rules by the SCAQMD Governing Board or may be adopted as rules in the future.

SCAQMD 2007 AQMP

The SCAQMD has published the Draft Final 2007 AQMP, which was adopted by the SCAQMD Governing Board on June 1, 2007. In September 2007, the CARB Board adopted the SCAQMD 2007 AQMP as part of the SIP. The purpose of the 2007 AQMP for the SCAB (and those portions of the Salton Sea Air Basin under the SCAQMD's jurisdiction) is to set forth a comprehensive program that will lead these areas into compliance with federal and state air quality planning requirements for ozone and $PM_{2.5}$.

In addition, as part of the 2007 AQMP, the SCAQMD is requesting U.S. EPA's approval of a "bump-up" to the "extreme" nonattainment classification for ozone in the SCAB, which would extend the attainment date to 2024 and allow for the attainment demonstration to rely on emission reductions from measures that anticipate the development of new technologies or improvement of existing control technologies. Although $PM_{2.5}$ plans for nonattainment areas were due in April 2008, the 2007 AQMP also focuses on attainment strategies for the $PM_{2.5}$ standard through stricter control of sulfur oxides, directly-emitted $PM_{2.5}$, NO_X, and VOCs. The need to commence $PM_{2.5}$ control strategies before April 2008 is due to the attainment date for $PM_{2.5}$ (2015) being much earlier than that for ozone (2021 for the current designation of severe-17 or 2024 for the extreme designation). Control measures and strategies for $PM_{2.5}$ will also help control ozone generation in the region because $PM_{2.5}$ and ozone share similar precursors (e.g., NO_X). The SCAQMD has integrated $PM_{2.5}$ and ozone reduction control measures and strategies in the 2007 AQMP. In addition, the AQMP focuses on reducing VOC emissions, which have not been reduced at the same rate as NO_X emissions in the past. Hence, the SCAB has not achieved the reductions in ozone as were expected in previous plans.

The 2007 AQMP was based on assumptions provided by both CARB and SCAG in the new EMFAC2007 model for the most recent motor vehicle and demographics information, respectively. The air quality levels projected in the 2007 AQMP are based on several assumptions. For example, the 2007 AQMP has assumed that development associated with general plans, specific plans, residential projects, and wastewater facilities will be constructed in accordance with population growth projections identified by SCAG in its 2004 RTP. The 2007 AQMP also has assumed that such development projects will implement strategies to reduce emissions generated during the construction and operational phases of development. The project's consistency with the 2007 AQMP is discussed as follows:

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook. These indicators are discussed below:

- Consistency Criterion No. 1: The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

Consistency Criterion No. 1 refers to violations of the CAAQS. As evaluated as part of the project LST analysis (previously presented), the project will not exceed the CAAQS for localized criteria pollutants during project operational activity (before and after mitigation). However, the project is expected to exceed the CAAQS for emissions of PM_{10} during short-term construction activity, even with implementation of the recommended mitigation measures. Although an exceedance of the CAAQS is expected to occur during project construction, any exceedances would be short-term and intermittent in nature, and cease upon the completion of project construction. Additionally, the analysis for long-term local air quality impacts showed that future CO concentration levels along roadways and at intersections affected by project traffic will not exceed the 1-hour and 8-hour State CO pollutant concentrations standards.

While construction emissions will be generated in excess of SCAQMD's regional threshold criteria, it is unlikely that short-term construction activities will increase the frequency or severity of existing air quality violations as monitored at the SCAQMD stations due to their temporary, short-term, and comparatively limited effect on local and regional air quality conditions. On the basis of the preceding discussion, the project is determined to be consistent with the first criterion.

- Consistency Criterion No. 2: The proposed project will not exceed the assumptions in the AQMP in 2015 or increments based on the years of project build-out phase.

The 2007 AQMP growth assumptions are generated by SCAG. SCAG derives its assumptions, in part, based on the General Plans of cities located within the SCAG region. Therefore, if a project does not exceed the growth projections in the applicable local General Plan, then the project is considered to be consistent with the growth assumptions in the AQMP.

The proposed project is within the sphere of influence of the New Model Colony Specific Plan, which was incorporated in the City's General Plan in 1999. The proposed project lies within sub-area 18 of the New Model Colony Specific Plan is therefore assumed to be consistent with land use designations and growth projections that were assumed in the current AQMP.

Although the project is considered to be compliant with Consistency Criterion No. 2, it should be noted that the project is not compliant with Consistency Criterion No. 1, and therefore the project is considered not to be consistent with the current AQMP.

4.8 Secondary Effects Evaluation

The potential impact of the project on sensitive receptors has also been considered. Sensitive receptors can include uses such as long term health care facilities, rehabilitation centers, and retirement homes. Residences, schools, playgrounds, child care centers, and athletic facilities can also be considered as sensitive receptors.

The potential sensitive receptors include the residential components of the project site and residential uses to the north of the project site. The locations of sensitive receptors relative to the project site are presented in Exhibit 4-A. It should be noted that earlier constructed phases may be occupied while later phases are being constructed. This may result in occupants being subject to short-term exposures of diesel particulate matter from construction equipment which have the potential to have a carcinogenic impact. Exposure during the construction process is considered short-term in duration (majority of diesel-fired PM_{10} is emitted during rough grading activity which will be complete before residents move in). Furthermore, cancer-risk thresholds are typically calculated using 70-year exposure durations (per CARB), since the project will have a short-term exposure duration that will cease upon completion of the project, risk is assumed to be less than significant. The potential risk can be further reduced with proper compliance with the recommended emissions reduction measures identified in Chapter 5.0 of this report.

Sensitive receptors on part of the project site have the potential to be affected during short-term construction activity due to odors and/or dust generated during construction activities. In addition these potential impacts can be reduced substantially with the use of low-VOC paint and with proper compliance with SCAQMD Rule 401, and 403.

The potential for the project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

EXHIBIT 4-A

SENSITIVE RECEPTOR LOCATIONS

The project does not contain land uses typically associated with emitting objectionable odors; however the proposed project is being built on current agricultural uses. There is potential that during construction activity, objectionable odors will be generated during the removal of manure and organic waste, these impacts would be short-term and cease upon completion of construction activities, however surrounding residents may be adversely affected by odors. Residents of the proposed project also have the potential to be affected by the surrounding agricultural uses in the vicinity of the project.

4.9 CO "Hot Spot" Analysis

A CO "hot spot" is a localized concentration of carbon monoxide that is above State and/or Federal 1-hour or 8-hour ambient air standards that is generally associated with idling or slow moving traffic. Because the project has the potential to worsen level of service (LOS) delays on adjacent roadways, a CO "hot spot" analysis is required to assess any localized CO impacts on sensitive receptors that may be situated adjacent to congested intersections.

The California Department of Transportation (Caltrans) recommends the use of the California Line Source Roadway Dispersion Model (CALINE4) in order to analyze localized CO concentrations. In order to calculate localized CO concentrations, the CALINE4 model utilizes meteorological data, traffic volumes, and emission generation rates. Additionally, roadway and intersection geometrics are input using an "x, y" coordinate system in order to better estimate the proximity of pedestrians to traffic. These geometrics as well as traffic volume counts were obtained from the report The Avenue Specific Plan Amendment Traffic Impact Study (Urban Crossroads, Inc., August 27, 2008).

In order to obtain an accurate estimate of CO emissions using the CALINE4 model, each intersection was divided into four segments: approach, slow, speed, and depart. In the "approach" segment, traffic is assumed to cruise toward the intersection for a distance of 600 meters at a speed of 16 miles per hour. In the "slow" segment, traffic is assumed to decelerate for a distance of 150 meters at a speed of 3 miles per hour. In the "speed" segment, traffic is assumed to accelerate for a distance of 150 meters after passing through the intersection, and a speed of 16 miles per hour is assumed. In the "depart" segment, traffic is assumed to depart from the intersection area for a distance of 600 meters, and a cruising speed of 26 miles per hour is assumed. Emission factors for vehicles traveling at these speeds were obtained using

CARB's EMFAC 2007 model. Emission factors used as inputs for CO analysis are presented in Appendix "E".

In order to accurately model pedestrian exposure to increased CO levels, receptors were placed at each corner of the intersection being analyzed at a distance of three meters from the edge of the road, consistent with Caltrans CO Protocol (pp. B-15). This placement ensures that concentrations are measured outside of the "mixing zone," and are unaffected by interference due to vehicle activity.

For the purposes of this evaluation, the 2015 With Project Conditions scenario was analyzed. Traffic volumes were obtained from the report The Avenue Specific Plan Amendment Traffic Impact Study (Urban Crossroads, Inc., August 27, 2008). In order to model only those intersections with the highest CO concentrations, the three intersections with the highest volumes for the AM and PM peak hours were selected for each scenario.

The CALINE-4 model generates CO concentrations averaged over a one-hour time period under worst-case atmospheric conditions, which include low wind speeds and low atmospheric circulation. Future CO concentrations were determined for the weekday peak time periods by adding the predicted increase in CO concentrations attributable to implementation of the proposed project to an ambient CO concentration within the project area. According to future SCAQMD projections, the background 1 hour CO level for the study area is assumed to be 3.6 parts per million (ppm). The 8-hour CO concentration was estimated by multiplying the 1-hour model estimate by the persistence factor for the project area (0.7) and adding the projected ambient background 8-hour CO concentration (2.9 ppm) for the study area. Per California Air Quality Standards for CO, the concentration of CO should not exceed 20.0 ppm for an averaging period of 1 hour or 9.0 ppm for an averaging period of 8 hours.

Table 4-6 summarizes the 1-hour and 8-hour CO concentrations for the 2015 With Project Conditions scenario. Based on the impact analysis none of the locations is projected to experience CO levels in excess of the allowable 1-hour concentration of 20.0 ppm. The highest projected CO "hot spot" 1-hour concentration is 6.4 ppm. The analysis also indicates that none of the locations is projected to experience CO levels in excess of the 8-hour allowable concentration of 9.0 ppm. The highest projected CO "hot-spot" 8-hour concentration is 4.86 ppm.

Since significant impacts would not occur at intersections with the highest potential for CO "hot spot" formation, no significant impacts are anticipated to occur at any other locations in the project vicinity as a result of the proposed project. Consequently, sensitive receptors would not be significantly affected by localized CO emissions generated by project-related traffic.

It should be noted that the traffic impact analysis considers a 2030 With Project Conditions scenario; however, for purposes of the CO "hot spot" analysis, an evaluation of these scenarios was not required as the 2015 analysis year provides the most conservative estimate for localized CO concentrations, since future vehicle emission reduction measures and regulations implemented by CARB will substantially reduce CO emissions to levels such that it would become almost physically impossible to create enough localized CO emissions to exceed the standard.

TABLE 4-6

2015 WITH PROJECT CONDITIONS CARBON MONOXIDE (CO) "HOT SPOT" LEVELS

#	INTERSECTION	Peak 1-Hour		8-Hour Average
		AM	PM	
1	Archibald Avenue (NS) and Edison Avenue (EW)	5.80	6.40	4.86
2	Milliken Avenue / Hamner Avenue (NS) and Edison Avenue (EW)	6.10	6.40	4.86
3	Mill Creek Avenue (NS) and Edison Avenue (EW)	5.60	5.90	4.51

* All values in ppm (parts per million)

5.0 FINDINGS AND CONCLUSIONS

5.1 Standard Regulatory Requirements

SCAQMD Rules that are currently applicable during construction activity for this project include but are not limited to: Rule 1113 (Architectural Coatings); Rule 431.2 (Low Sulfur Fuel); Rule 403 (Fugitive Dust); and Rule 1186 / 1186.1 (Street Sweepers).

The specific Rule 403 regulatory requirements that are applicable to this project are as follows:

- All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.

- The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the project are watered at least three times daily during dry weather. Implementation of this measure is estimated to reduce PM_{10} and $PM_{2.5}$ fugitive dust emissions by approximately 61%.

- The contractor shall ensure that traffic speeds on unpaved roads and project site areas are reduced to 15 miles per hour or less to reduce PM10 and PM2.5 fugitive dust haul road emissions by approximately 44%.

A more detailed summary of Rule 403 requirements is presented in Appendix "F".

Additional regulatory requirements that are in effect during project construction include the following:

- The California Air Resources Board, in Title 13, Chapter 10, Section 2485, Division 3 of the of the California Code of Regulations, imposes a requirement that heavy duty trucks accessing the site shall not idle for greater than five minutes at any location.

- The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and during smog season (May through October) by not allowing construction equipment to be left idling for more than five minutes (per California law). As a conservative measure, no reduction was taken in this analysis for the use of properly timed and tuned equipment.

- The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less). As a conservative measure, no reduction was taken in this analysis for the use of low-sulfur diesel fuel.

- During construction of the proposed project, only low-polluting paints and coatings as defined in SCAQMD Rule 1113 shall be used.

5.2 Construction Activity Recommended Mitigation Measures

Recommended emissions reduction measures to reduce construction air quality impacts include:

- The contractor shall ensure that the use of all off-road construction equipment is suspended during first-stage smog alerts.

- During grading activities, chemical soil stabilizers shall be applied to inactive areas to reduce fugitive dust emissions. It is conservatively estimated that implementation of this measure will reduce PM_{10} and $PM_{2.5}$ fugitive dust emissions by approximately 84%.

- Contractor shall ensure that all off-road heavy-duty construction equipment utilized during construction activity will be CARB Tier 2 Certified or better (to the maximum extent feasible). Implementation of this measure is estimated to reduce emissions of VOCs, NO_X, PM_{10}, and $PM_{2.5}$ from associated construction equipment by approximately 78.31%, 54.57%, 54.82%, and 50.43%, respectively.

- The contractor shall utilize existing power sources (e.g., power poles) or clean-fuel generators rather than diesel or gasoline powered generators where feasible. The effectiveness of this measure to reduce emissions is not quantified by the SCAQMD.

5.4 Operational Activity Recommended Mitigation Measures

Recommended mitigation measures to reduce operational air quality impacts for mobile and stationary sources to the maximum extent possible include:

- Construction of buildings that exceed minimum statewide energy requirements 20% beyond Title 24; this may include, at a minimum, but is not limited to:
  - Use of low emission water heaters
  - Use of central water heating systems
  - Use of energy efficient appliances
  - Use of increased insulation
  - Use of automated controls for air conditioners
  - Use of energy-efficient parking lot lights
  - Use of lighting controls and energy-efficient lighting

- Require that project tenants utilize low-VOC interior and exterior coatings during project repainting consistent with SCAQMD Rule 1113.

- Minimize exposure of building occupants to environmental tobacco smoke by prohibiting smoking in building, designating smoking areas at least 25-feet away from building entries, air intakes, and operable windows.

- Provide additional outdoor air ventilation to improve indoor air quality for improved occupant comfort, well-being, and productivity in the office buildings.

- Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants through compliance with SCAQMD Rule 1168, which limits the VOC content of paints, varnish, floor coatings, stains, adhesives, sealants, and primers.

- Provide site improvements such as street lighting, street furniture, route signs, and sidewalks or pedestrian paths to promote pedestrian activity for short trips.

5.5 Evaluation of Significance

Pursuant to the California Environmental Quality Act (CEQA), air quality impacts may be considered significant if:

- ***A project conflicts with, or obstructs implementation of the applicable Air Quality Management Plan (AQMP).***

The applicable 2007 AQMP developed by the SCAQMD sets forth a comprehensive program with a goal of leading the air basin into compliance with all federal and state ambient air quality standards. The applicable AQMP control strategies and related emissions reductions are based upon emissions projections for a future development scenario derived from expected land use, population, and employment characteristics that were identified with consultation from local governments. Therefore, compliance with the applicable AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections.

The proposed project is consistent with the growth projections for the project area. Additionally, as evaluated as part of the project LST analysis (previously presented), the project will not exceed the CAAQS for localized criteria pollutants during project operational activity. Additionally, the analysis for long-term local air quality impacts showed that future CO concentration levels along roadways and at intersections affected by project traffic will not exceed the 1-hour and 8-hour State CO pollutant concentrations standards. However, the results of the LST analysis indicate that the CAAQS will be exceeded during short-term project construction. It should be noted, however, that any exceedances will be intermittent and short-term in nature, and cease upon the completion of project construction.

While construction emissions will be generated in excess of SCAQMD's regional threshold criteria, it is unlikely that short-term construction activities will increase the frequency or severity of existing air quality violations as monitored at the SCAQMD stations due to their temporary, short-term, and comparatively limited effect on local and regional air quality conditions. On the basis of the preceding discussion, the project is determined not to be consistent with the applicable AQMP.

- ***Project-generated emissions violate federal or state ambient air quality standards.***

The project area is designated a non-attainment area for ozone, PM_{10}, and $PM_{2.5}$. The analysis presented in this report indicates that the incremental increase in operational emissions will not exceed the regional or localized pollutant thresholds established by the SCAQMD. However, emissions resulting from short-term construction will exceed SCAQMD regional thresholds for emissions of VOCs, NO_X, CO, PM_{10}, and $PM_{2.5}$ and will exceed the SCAQMD localized pollutant thresholds for emissions of PM_{10} (after mitigation). Therefore, the results of the analysis indicate that the proposed project may potentially violate federal or state ambient air quality standards during short-term construction only.

- ***A project contributes a cumulatively considerable net increase of a criteria pollutant in a non-attainment area.***

The project area is designated as non-attainment for ozone, PM_{10}, and $PM_{2.5}$. The results of the analysis indicate that the air quality impacts for the proposed project are significant on an individual project basis. CEQA Section 2100 (e) addresses evaluation of cumulative effects allowing the use of approved land use documents in a cumulative impact analysis. CEQA Guidelines Section 15064 (i) (3) indicate that for an impact involving a resource that is addressed by an approved plan or mitigation program, the lead agency may determine that a project's incremental contribution is not cumulatively considerable if the project complies with the adopted plan or program. In addressing cumulative effects for air quality, the AQMP is the most appropriate document to use due to its comprehensive nature in identifying a plan that is expected to lead the air basin (including the project area) into compliance with all federal and state ambient air quality standards.

The proposed project is not consistent with the applicable AQMP. Additionally, because project emissions are significant on an individual project basis, it is assumed that the project's incremental contribution to criteria pollutant emissions may be cumulatively considerable.

- ***Project-generated emissions expose sensitive receptors to substantial pollutant concentrations.***

The potential sensitive receptors include the residential components of the project site and residential uses to the north of the project site. It should be noted that earlier constructed phases may be occupied while later phases are being constructed. This may result in occupants being subject to short-term exposures of diesel particulate matter from construction equipment which have the potential to have a carcinogenic impact. Exposure during the construction process is considered short-term in duration (majority of diesel-fired PM_{10} is emitted during rough grading activity which will be complete before residents move in). Furthermore, cancer-risk thresholds are typically calculated using 70-year exposure durations (per CARB), since the project will have a short-term exposure duration that will cease upon completion of the project, risk is assumed to be less than significant. The potential risk can be further reduced with proper compliance with the recommended emissions reduction measures identified in Chapter 5.0 of this report.

Sensitive receptors have the potential to be affected during short-term construction activity due to odors and/or dust generated during construction activities. In addition these potential impacts can be reduced substantially with the use of low-VOC paint and with proper compliance with SCAQMD Rule 401, and 403.

- ***Project creates objectionable odors affecting a substantial number of people.***

Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

The project does not contain land uses typically associated with emitting objectionable odors; however the proposed project is being built on current agricultural uses. There is potential that during construction activity, objectionable odors will be generated during the removal of manure and organic waste, these impacts would be short-term and cease upon completion of construction activities, however surrounding residents may be adversely affected by odors. Residents of the proposed project also have the potential to be affected by the surrounding agricultural uses in the vicinity of the project.

5.6 Conclusion

The project-related short-term construction emissions burdens (after mitigation), along with a comparison of SCAQMD recommended significance thresholds, are shown in Tables 5-1 (regional) and 5-2 (localized).

For regional emissions, after the implementation of the recommended mitigation measures, emissions resulting from short-term construction activity will exceed the regional pollutant thresholds for emissions of VOCs, NO_X, CO, PM_{10}, and $PM_{2.5}$.

For localized emissions, the results of the analysis indicate that emissions resulting from short-term construction activity will exceed the localized pollutant thresholds for emissions of PM_{10} only (after mitigation).

Long-term operational project regional emissions resulting from the incremental increase in land uses, along with a comparison of SCAQMD recommended significance thresholds, are shown in Table 5-3. Localized emissions are presented in Table 5-4.

For regional emissions, after the implementation of the recommended mitigation measures, the incremental increase in land uses only will not exceed the regional pollutant thresholds established by the SCAQMD.

For localized emissions, the results of the analysis indicate that emissions resulting from the project's incremental increase in land uses will not exceed the localized pollutant thresholds (before and after mitigation).

TABLE 5-1
EMISSIONS SUMMARY OF CONSTRUCTION ACTIVITIES (POUNDS PER DAY) (WITH MITIGATION)

Construction Activity	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Demolition						
Fugitive Dust	0	0	0	0	101.64	21.14
Off Road Equipment Emissions	2.18	38.25	39.35	0	1.97	1.99
On Road Equipment Emissions	11.46	161.20	59.74	0.18	7.39	6.43
Worker Commute	0.12	0.22	3.56	0.00	0.03	0.01
Peak Day Mass Emissions	**13.76**	**199.67**	**102.65**	**0.18**	**111.03**	**29.57**
SCAQMD Regional Threshold	75	100	550	150	150	55
Significant?	**NO**	**YES**	**NO**	**NO**	**NO**	**NO**

Construction Activity	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Grading						
Fugitive Dust	0	0	0	0	593.25	123.89
Off Road Equipment Emissions	10.51	210.30	202.17	0	8.64	8.72
On Road Equipment Emissions	15.98	224.03	81.61	0.26	9.97	8.62
Worker Commute	0.43	0.79	13.17	0.01	0.11	0.06
Peak Day Mass Emissions	**26.92**	**435.12**	**296.95**	**0.27**	**611.97**	**141.29**
SCAQMD Regional Threshold	75	100	550	150	150	55
Significant?	**NO**	**YES**	**NO**	**NO**	**YES**	**YES**

Construction Activity	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Underground Utility Construction						
Equipment Emissions	2.43	34.1634	42.64	0	2.67	2.69
Worker Commute	0.18	0.34	5.86	0.01	0.06	0.03
Paving						
Off-Gas Emissions	3.65	0.00	0	0	0	0
Off-Road Equipment Emissions	6.45	96.90	104.89	0	6.25	6.31
On-Road Equipment Emissions	1.03	13.79	5.05	0.02	0.61	0.51
Worker Commute	0.30	0.55	9.42	0.01	0.09	0.05
Building Construction						
Off-Road Equipment	1.10	21.19	19.88	0	0.99	1.01
Vendor Trips	5.39	62.81	50.56	0.13	2.98	2.47
Worker Commute	11.41	21.19	364.59	0.47	3.48	1.92
Architectural Coating						
Architectural Coatings	126.75	0	0	0	0	0
Worker Commute	0.16	0.29	4.98	0.01	0.05	0.03
Peak Day Mass Emissions	**158.86**	**251.22**	**607.87**	**0.65**	**17.18**	**15.01**
SCAQMD Regional Threshold	75	100	550	150	150	55
Significant?	**YES**	**YES**	**YES**	**NO**	**NO**	**NO**

Use of CARB Certified Tier II equipment is estimated to reduce emissions of VOCs, NOX, PM10, and PM2.5 by approximately 78.31%, 54.57%, 54.82%, and 50.43%, respectively.

Source: URBEMIS 2007 v. 9.2.4

TABLE 5-2

LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION (WITH MITIGATION)

Construction	**CO**		**NO_2**	**PM_{10}**	**$PM_{2.5}$**
Averaging Time	1-Hour	8-Hour	1-Hour	24-Hours (Construction)	
Peak Day Localized Emissions	0.306	0.221	1.46E-02	23.68	4.97
Background Concentration	4	2.7	0.08		
Total Concentration	**4.306**	**2.921**	**0.09**	**23.68**	**4.97**
SCAQMD Localized Significance Threshold	20	9	0.18	10.4	10.4
Significant?	**NO**	**NO**	**NO**	**YES**	**NO**

Note: PM_{10} and $PM_{2.5}$ concentrations are expressed in μg/m^3. All others are expressed in ppm.

TABLE 5-3

SUMMARY OF PEAK OPERATIONAL EMISSIONS (SUMMER)
(POUNDS PER DAY) (WITH MITIGATION)

Operational Activities	**VOC**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Vehicle Emissions	21.25	30.17	239.03	0.33	53.36	10.58
Natural Gas Use	0.28	3.69	1.74	0	0.01	0.01
Landscape Maintenance Emissions	0.75	0.07	5.86	0	0.02	0.02
Consumer Products	14.67	0	0	0	0	0
Architectural Coatings	1.05	0	0	0	0	0
Operational Emissions	**38.00**	**33.93**	**246.63**	**0.33**	**53.39**	**10.61**
SCAQMD Regional Threshold	55	55	550	150	150	55
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

SUMMARY OF PEAK OPERATIONAL EMISSIONS (WINTER)
(POUNDS PER DAY) (WITH MITIGATION)

Operational Activities	**VOC**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Vehicle Emissions	22.90	35.83	231.30	0.28	53.36	10.58
Natural Gas Use	0.28	3.69	1.74	0	0.01	0.01
Landscape Maintenance Emissions	0.75	0.07	5.86	0	0.02	0.02
Fireplace Emissions	0.10	1.75	0.75	0	0.14	0.14
Consumer Products	14.67	0	0	0	0	0
Architectural Coatings	1.05	0	0	0	0	0
Operational Emissions	**39.75**	**41.34**	**239.65**	**0.29**	**53.53**	**10.75**
SCAQMD Regional Threshold	55	55	550	150	150	55
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Source: URBEMIS 2007 v 9.2.4 model outputs

TABLE 5-4

LOCALIZED SIGNIFICANCE SUMMARY OPERATIONS (WITH MITIGATION)

Operations	**CO**		**NO_X**	**PM_{10}**	**$PM_{2.5}$**
	Averaging Time				
	1-Hour	8-Hour	1-Hour	24-Hours (Operations)	
Peak Day Localized Emissions	0.013	0.009	3.14E-05	0.04	0.03
Background Concentration	4	2.7	0.08		
Total Concentration	**4.013**	**2.709**	**0.08**	**0.04**	**0.03**
SCAQMD Localized Significance Threshold	20	9	0.18	2.5	2.5
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**

Note: PM_{10} and $PM_{2.5}$ concentrations are expressed in μg/m^3. All others are expressed in ppm.

5.7 Correlation Between Adverse and Significant Air Impacts and Human Health Effects Pursuant to Guideline Section 15126.2

It should be noted that localized emissions of CO, NO_2, and $PM_{2.5}$ during short- term construction activity can be reduced to less than significant levels after the implementation of recommended mitigation measures (previously presented).

Long-term operational impacts are below localized levels of significance for the previously mentioned pollutants before and after recommended mitigation measures are implemented.

The project however still exceeds localized emissions thresholds for emissions of PM_{10} and regional emissions thresholds for emissions of VOCs, NO_X, CO, PM_{10}, and $PM_{2.5}$ during short-term construction. The project therefore has the potential to subject sensitive receptors to substantial pollutant concentrations or contribute to an existing exceedance of the following criteria pollutants. Presented below are typical health effects associated with high concentration levels of emissions for the following pollutants:

Carbon Monoxide (CO):

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood, thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected, but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and death (See Appendix G for more details).

Oxides of Sulfur (SO_X):

The major health concerns associated with exposure to high concentrations of SO_x include effects on breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Major subgroups of the population that are most sensitive to SO_x include individuals with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) as well as children and the elderly. Emissions of SO_x can also damage the foliage of trees and agricultural crops. Sulfur oxides can react to form sulfates, which significantly reduce visibility (See Appendix G for more details).

Oxides of Nitrogen (NO_x):

NOx can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. The effects of short-term exposure are still unclear, but continued or frequent exposure to concentrations that are typically much higher than normally found in ambient air may cause increased incidence of acute respiratory illness in children. Health effects associated with NOx are an increase in incidence of chronic bronchitis and lung irritation. Chronic exposure to NO2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. Airborne NOx can also impair visibility. NOx is a major component of acid deposition in California (See Appendix G for more details).

Ozone (O_3):

While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system and other tissues. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems such as forests and foothill communities. Societal costs from ozone damage include increased medical costs the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields (See Appendix G for more details).

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

The health effects of particulates are focused on those sized 10 µg (micrometers) aerodynamic diameter or smaller. These can be inhaled through the upper airways and deposited in the lower airways and gas exchange tissue in the lung. These particles are often referred to as PM_{10}.

In recent years additional focus has been placed on particles having an aerodynamic diameter of 2.5 µg or less ($PM_{2.5}$). A greater faction of particles in this size range can penetrate and deposit deep in the lungs. The major types of effects associated with particulate matter include:

increased mortality, exasperation of respiratory disease and of cardiovascular disease as evidence by increases in: respiratory symptoms, hospital admissions and emergency room visits, physician office visits, school absences, work loss days, effects on lung function, changes in lung morphology (See Appendix G for more details).

Reactive Organic Gases (ROGs) and Volatile Organic Compounds(VOCs):

The primary health effects of hydrocarbons result from the formation of ozone and its related health effects. High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons are considered Toxic Air Contaminants, or air toxics. There are no health standards for ROG separately. In addition, some compounds that make up ROGs are also toxic (i.e. benzene) (See Appendix G for more details).

APPENDIX A

Construction Impact Analysis

9/5/2008 04:18:15 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: U:\UcJobs_02600-03000_02700\02719\Urbemis\2719 Construction.urb924

Project Name: The Avenue Construction

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
2008 TOTALS (lbs/day unmitigated)	21.61	245.62	102.65	0.18	102.29	11.14	113.43	21.35	10.25	31.60
2008 TOTALS (lbs/day mitigated)	21.61	245.62	102.65	0.18	102.29	11.14	113.43	21.35	10.25	31.60
2009 TOTALS (lbs/day unmitigated)	64.84	687.72	296.94	0.28	6,401.00	28.21	6,429.21	1,336.91	25.95	1,362.85
2009 TOTALS (lbs/day mitigated)	64.84	687.72	296.94	0.28	594.25	28.21	622.46	124.22	25.95	150.17
2010 TOTALS (lbs/day unmitigated)	46.72	438.30	199.85	0.01	6,400.06	17.96	6,418.02	1,336.60	16.52	1,353.12
2010 TOTALS (lbs/day mitigated)	46.72	438.30	199.85	0.01	593.31	17.96	611.27	123.92	16.52	140.43
2011 TOTALS (lbs/day unmitigated)	160.19	433.82	602.90	0.63	6,400.06	26.43	6,416.33	1,336.60	24.19	1,351.56
2011 TOTALS (lbs/day mitigated)	160.19	433.82	602.90	0.63	593.31	26.43	609.58	123.92	24.19	138.87
2012 TOTALS (lbs/day unmitigated)	157.53	189.32	454.50	0.61	2.62	11.03	13.65	0.94	10.02	10.96
2012 TOTALS (lbs/day mitigated)	157.53	189.32	454.50	0.61	2.62	11.03	13.65	0.94	10.02	10.96

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
Time Slice 12/1/2008-12/31/2008 Active Days: 23	21.61	245.62	102.65	0.18	102.29	11.14	113.43	21.35	10.25	31.60
Demolition 12/01/2008-03/31/2009	21.61	245.62	102.65	0.18	102.29	11.14	113.43	21.35	10.25	31.60
Fugitive Dust	0.00	0.00	0.00	0.00	101.64	0.00	101.64	21.14	0.00	21.14
Demo Off Road Diesel	10.04	84.20	39.35	0.00	0.00	4.37	4.37	0.00	4.02	4.02
Demo On Road Diesel	11.46	161.20	59.74	0.18	0.63	6.76	7.39	0.21	6.22	6.43
Demo Worker Trips	0.12	0.22	3.56	0.00	0.02	0.01	0.03	0.01	0.01	0.01
Time Slice 1/1/2009-3/31/2009 Active Days: 64	20.52	230.99	96.09	0.18	102.29	10.24	112.52	21.35	9.42	30.77
Demolition 12/01/2008-03/31/2009	20.52	230.99	96.09	0.18	102.29	10.24	112.52	21.35	9.42	30.77
Fugitive Dust	0.00	0.00	0.00	0.00	101.64	0.00	101.64	21.14	0.00	21.14
Demo Off Road Diesel	9.63	79.51	37.69	0.00	0.00	4.12	4.12	0.00	3.79	3.79
Demo On Road Diesel	10.79	151.28	55.11	0.18	0.63	6.10	6.73	0.21	5.61	5.82
Demo Worker Trips	0.11	0.20	3.29	0.00	0.02	0.01	0.03	0.01	0.01	0.01
Time Slice 4/1/2009-7/31/2009 Active Days: 88	64.84	**687.72**	296.94	0.28	**6,401.00**	**28.21**	**6,429.21**	**1,336.91**	**25.95**	**1,362.85**
Fine Grading 04/01/2009-07/31/2009	15.98	224.03	81.61	0.26	0.94	9.03	9.97	0.31	8.31	8.62
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	15.98	224.03	81.61	0.26	0.94	9.03	9.97	0.31	8.31	8.62
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 04/01/2009-04/30/2011	48.86	463.69	215.34	0.01	6,400.06	19.17	6,419.24	1,336.60	17.64	1,354.24
Mass Grading Dust	0.00	0.00	0.00	0.00	6,400.00	0.00	6,400.00	1,336.58	0.00	1,336.58
Mass Grading Off Road Diesel	48.44	462.90	202.17	0.00	0.00	19.13	19.13	0.00	17.60	17.60
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.43	0.79	13.17	0.01	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 8/3/2009-12/31/2009 Active Days: 109	48.86	463.69	215.34	0.01	6,400.06	19.17	6,419.24	1,336.60	17.64	1,354.24
Mass Grading 04/01/2009-04/30/2011	48.86	463.69	215.34	0.01	6,400.06	19.17	6,419.24	1,336.60	17.64	1,354.24
Mass Grading Dust	0.00	0.00	0.00	0.00	6,400.00	0.00	6,400.00	1,336.58	0.00	1,336.58
Mass Grading Off Road Diesel	48.44	462.90	202.17	0.00	0.00	19.13	19.13	0.00	17.60	17.60
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.43	0.79	13.17	0.01	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 1/1/2010-12/31/2010 Active Days: 261	46.72	438.30	199.85	0.01	6,400.06	17.96	6,418.02	1,336.60	16.52	1,353.12
Mass Grading 04/01/2009-04/30/2011	46.72	438.30	199.85	0.01	6,400.06	17.96	6,418.02	1,336.60	16.52	1,353.12
Mass Grading Dust	0.00	0.00	0.00	0.00	6,400.00	0.00	6,400.00	1,336.58	0.00	1,336.58

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Mass Grading Off Road Diesel	46.34	437.58	187.72	0.00	0.00	17.91	17.91	0.00	16.48	16.48
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.39	0.72	12.13	0.01	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 1/3/2011-4/29/2011 Active Days: 85	43.73	409.52	186.71	0.01	6,400.06	16.26	6,416.33	1,336.60	14.96	1,351.56
Mass Grading 04/01/2009-04/30/2011	43.73	409.52	186.71	0.01	6,400.06	16.26	6,416.33	1,336.60	14.96	1,351.56
Mass Grading Dust	0.00	0.00	0.00	0.00	6,400.00	0.00	6,400.00	1,336.58	0.00	1,336.58
Mass Grading Off Road Diesel	43.38	408.87	175.50	0.00	0.00	16.22	16.22	0.00	14.92	14.92
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.35	0.65	11.21	0.01	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 5/2/2011-5/31/2011 Active Days: 22	68.01	433.82	**602.90**	**0.63**	2.72	26.43	29.15	0.97	24.19	25.16
Asphalt 05/01/2011-05/31/2011	34.73	227.63	119.37	0.03	0.12	14.40	14.52	0.04	13.24	13.29
Paving Off-Gas	3.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	29.76	213.29	104.89	0.00	0.00	13.83	13.83	0.00	12.72	12.72
Paving On Road Diesel	1.03	13.79	5.05	0.02	0.07	0.53	0.61	0.02	0.49	0.51
Paving Worker Trips	0.30	0.55	9.42	0.01	0.05	0.04	0.09	0.02	0.03	0.05
Building 05/01/2011-05/31/2012	21.88	130.65	435.03	0.59	2.56	6.11	8.66	0.91	5.50	6.41
Building Off Road Diesel	5.08	46.65	19.88	0.00	0.00	2.20	2.20	0.00	2.03	2.03
Building Vendor Trips	5.39	62.81	50.56	0.13	0.46	2.52	2.98	0.16	2.31	2.47
Building Worker Trips	11.41	21.19	364.59	0.47	2.10	1.38	3.48	0.76	1.16	1.92
Trenching 05/01/2011-08/31/2012	11.40	75.54	48.50	0.01	0.03	5.93	5.96	0.01	5.45	5.46
Trenching Off Road Diesel	11.21	75.20	42.64	0.00	0.00	5.90	5.90	0.00	5.43	5.43
Trenching Worker Trips	0.18	0.34	5.86	0.01	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 6/1/2011-12/30/2011 Active Days: 153	**160.19**	206.47	488.52	0.61	2.62	12.05	14.67	0.94	10.96	11.90
Building 05/01/2011-05/31/2012	21.88	130.65	435.03	0.59	2.56	6.11	8.66	0.91	5.50	6.41
Building Off Road Diesel	5.08	46.65	19.88	0.00	0.00	2.20	2.20	0.00	2.03	2.03
Building Vendor Trips	5.39	62.81	50.56	0.13	0.46	2.52	2.98	0.16	2.31	2.47
Building Worker Trips	11.41	21.19	364.59	0.47	2.10	1.38	3.48	0.76	1.16	1.92
Coating 06/01/2011-07/31/2012	126.91	0.29	4.98	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	126.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.16	0.29	4.98	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	11.40	75.54	48.50	0.01	0.03	5.93	5.96	0.01	5.45	5.46
Trenching Off Road Diesel	11.21	75.20	42.64	0.00	0.00	5.90	5.90	0.00	5.43	5.43
Trenching Worker Trips	0.18	0.34	5.86	0.01	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 1/2/2012-5/31/2012 Active Days: 109	157.53	189.32	454.50	0.61	2.62	11.03	13.65	0.94	10.02	10.96
Building 05/01/2011-05/31/2012	19.96	118.62	402.34	0.59	2.56	5.59	8.15	0.91	5.02	5.93
Building Off Road Diesel	4.71	43.33	19.10	0.00	0.00	1.98	1.98	0.00	1.82	1.82
Building Vendor Trips	4.94	56.00	46.53	0.13	0.46	2.23	2.69	0.16	2.04	2.20
Building Worker Trips	10.32	19.29	336.71	0.47	2.10	1.38	3.48	0.76	1.16	1.92
Coating 06/01/2011-07/31/2012	126.90	0.26	4.60	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	126.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.14	0.26	4.60	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	10.67	70.43	47.56	0.01	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	10.50	70.12	42.15	0.00	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.17	0.31	5.41	0.01	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 6/1/2012-7/31/2012 Active Days: 43	137.57	70.69	52.16	0.01	0.06	5.44	5.50	0.02	5.00	5.02
Coating 06/01/2011-07/31/2012	126.90	0.26	4.60	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	126.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.14	0.26	4.60	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	10.67	70.43	47.56	0.01	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	10.50	70.12	42.15	0.00	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.17	0.31	5.41	0.01	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 8/1/2012-8/31/2012 Active Days: 23	10.67	70.43	47.56	0.01	0.03	5.42	5.45	0.01	4.99	5.00
Trenching 05/01/2011-08/31/2012	10.67	70.43	47.56	0.01	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	10.50	70.12	42.15	0.00	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.17	0.31	5.41	0.01	0.03	0.02	0.06	0.01	0.02	0.03

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Phase Assumptions

Phase: Demolition 12/1/2008 - 3/31/2009 - Default Demolition Description
Building Volume Total (cubic feet): 1000000
Building Volume Daily (cubic feet): 242000
On Road Truck Travel (VMT): 4481.48
Off-Road Equipment:
1 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 8 hours per day
2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
4 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
4 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Fine Grading 4/1/2009 - 7/31/2009 - Type Your Description Here
Total Acres Disturbed: 0
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 6636.36
Off-Road Equipment:

Phase: Mass Grading 4/1/2009 - 4/30/2011 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 202
Maximum Daily Acreage Disturbed: 50
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 50000 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 0
Off-Road Equipment:
18 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
4 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day
6 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
12 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
4 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 5/1/2011 - 8/31/2012 - Default Trenching Description
Off-Road Equipment:
4 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
4 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day
9 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
3 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
3 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 5/1/2011 - 5/31/2011 - Default Paving Description
Acres to be Paved: 32
Off-Road Equipment:
6 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
6 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
6 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
6 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
13 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

Phase: Building Construction 5/1/2011 - 5/31/2012 - Default Building Construction Description
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
1 Generator Sets (549 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 8 hours per day
1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 6/1/2011 - 7/31/2012 - Default Architectural Coating Description
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

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Time Slice 12/1/2008-12/31/2008 Active Days: 23	21.61	245.62	102.65	0.18	102.29	11.14	113.43	21.35	10.25	31.60
Demolition 12/01/2008-03/31/2009	21.61	245.62	102.65	0.18	102.29	11.14	113.43	21.35	10.25	31.60
Fugitive Dust	0.00	0.00	0.00	0.00	101.64	0.00	101.64	21.14	0.00	21.14
Demo Off Road Diesel	10.04	84.20	39.35	0.00	0.00	4.37	4.37	0.00	4.02	4.02
Demo On Road Diesel	11.46	161.20	59.74	0.18	0.63	6.76	7.39	0.21	6.22	6.43
Demo Worker Trips	0.12	0.22	3.56	0.00	0.02	0.01	0.03	0.01	0.01	0.01
Time Slice 1/1/2009-3/31/2009 Active Days: 64	20.52	230.99	96.09	0.18	102.29	10.24	112.52	21.35	9.42	30.77
Demolition 12/01/2008-03/31/2009	20.52	230.99	96.09	0.18	102.29	10.24	112.52	21.35	9.42	30.77
Fugitive Dust	0.00	0.00	0.00	0.00	101.64	0.00	101.64	21.14	0.00	21.14
Demo Off Road Diesel	9.63	79.51	37.69	0.00	0.00	4.12	4.12	0.00	3.79	3.79
Demo On Road Diesel	10.79	151.28	55.11	0.18	0.63	6.10	6.73	0.21	5.61	5.82
Demo Worker Trips	0.11	0.20	3.29	0.00	0.02	0.01	0.03	0.01	0.01	0.01
Time Slice 4/1/2009-7/31/2009 Active Days: 88	64.84	**687.72**	296.94	0.28	594.25	**28.21**	622.46	124.22	**25.95**	150.17
Fine Grading 04/01/2009-07/31/2009	15.98	224.03	81.61	0.26	0.94	9.03	9.97	0.31	8.31	8.62
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	15.98	224.03	81.61	0.26	0.94	9.03	9.97	0.31	8.31	8.62
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 04/01/2009-04/30/2011	48.86	463.69	215.34	0.01	593.31	19.17	612.49	123.92	17.64	141.55
Mass Grading Dust	0.00	0.00	0.00	0.00	593.25	0.00	593.25	123.89	0.00	123.89
Mass Grading Off Road Diesel	48.44	462.90	202.17	0.00	0.00	19.13	19.13	0.00	17.60	17.60
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.43	0.79	13.17	0.01	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 8/3/2009-12/31/2009 Active Days: 109	48.86	463.69	215.34	0.01	593.31	19.17	612.49	123.92	17.64	141.55
Mass Grading 04/01/2009-04/30/2011	48.86	463.69	215.34	0.01	593.31	19.17	612.49	123.92	17.64	141.55
Mass Grading Dust	0.00	0.00	0.00	0.00	593.25	0.00	593.25	123.89	0.00	123.89
Mass Grading Off Road Diesel	48.44	462.90	202.17	0.00	0.00	19.13	19.13	0.00	17.60	17.60
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.43	0.79	13.17	0.01	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 1/1/2010-12/31/2010 Active Days: 261	46.72	438.30	199.85	0.01	593.31	17.96	611.27	123.92	16.52	140.43
Mass Grading 04/01/2009-04/30/2011	46.72	438.30	199.85	0.01	593.31	17.96	611.27	123.92	16.52	140.43
Mass Grading Dust	0.00	0.00	0.00	0.00	593.25	0.00	593.25	123.89	0.00	123.89
Mass Grading Off Road Diesel	46.34	437.58	187.72	0.00	0.00	17.91	17.91	0.00	16.48	16.48
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.39	0.72	12.13	0.01	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 1/3/2011-4/29/2011 Active Days: 85	43.73	409.52	186.71	0.01	593.31	16.26	609.58	123.92	14.96	138.87
Mass Grading 04/01/2009-04/30/2011	43.73	409.52	186.71	0.01	593.31	16.26	609.58	123.92	14.96	138.87
Mass Grading Dust	0.00	0.00	0.00	0.00	593.25	0.00	593.25	123.89	0.00	123.89
Mass Grading Off Road Diesel	43.38	408.87	175.50	0.00	0.00	16.22	16.22	0.00	14.92	14.92
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.35	0.65	11.21	0.01	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 5/2/2011-5/31/2011 Active Days: 22	68.01	433.82	**602.90**	**0.63**	2.72	26.43	29.15	0.97	24.19	25.16
Asphalt 05/01/2011-05/31/2011	34.73	227.63	119.37	0.03	0.12	14.40	14.52	0.04	13.24	13.29
Paving Off-Gas	3.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	29.76	213.29	104.89	0.00	0.00	13.83	13.83	0.00	12.72	12.72
Paving On Road Diesel	1.03	13.79	5.05	0.02	0.07	0.53	0.61	0.02	0.49	0.51
Paving Worker Trips	0.30	0.55	9.42	0.01	0.05	0.04	0.09	0.02	0.03	0.05
Building 05/01/2011-05/31/2012	21.88	130.65	435.03	0.59	2.56	6.11	8.66	0.91	5.50	6.41
Building Off Road Diesel	5.08	46.65	19.88	0.00	0.00	2.20	2.20	0.00	2.03	2.03
Building Vendor Trips	5.39	62.81	50.56	0.13	0.46	2.52	2.98	0.16	2.31	2.47
Building Worker Trips	11.41	21.19	364.59	0.47	2.10	1.38	3.48	0.76	1.16	1.92
Trenching 05/01/2011-08/31/2012	11.40	75.54	48.50	0.01	0.03	5.93	5.96	0.01	5.45	5.46
Trenching Off Road Diesel	11.21	75.20	42.64	0.00	0.00	5.90	5.90	0.00	5.43	5.43
Trenching Worker Trips	0.18	0.34	5.86	0.01	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 6/1/2011-12/30/2011 Active Days: 153	**160.19**	206.47	488.52	0.61	2.62	12.05	14.67	0.94	10.96	11.90
Building 05/01/2011-05/31/2012	21.88	130.65	435.03	0.59	2.56	6.11	8.66	0.91	5.50	6.41

Building Off Road Diesel	5.08	46.65	19.88	0.00	0.00	2.20	2.20	0.00	2.03	2.03
Building Vendor Trips	5.39	62.81	50.56	0.13	0.46	2.52	2.98	0.16	2.31	2.47
Building Worker Trips	11.41	21.19	364.59	0.47	2.10	1.38	3.48	0.76	1.16	1.92
Coating 06/01/2011-07/31/2012	126.91	0.29	4.98	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	126.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.16	0.29	4.98	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	11.40	75.54	48.50	0.01	0.03	5.93	5.96	0.01	5.45	5.46
Trenching Off Road Diesel	11.21	75.20	42.64	0.00	0.00	5.90	5.90	0.00	5.43	5.43
Trenching Worker Trips	0.18	0.34	5.86	0.01	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 1/2/2012-5/31/2012 Active Days: 109	157.53	189.32	454.50	0.61	2.62	11.03	13.65	0.94	10.02	10.96
Building 05/01/2011-05/31/2012	19.96	118.62	402.34	0.59	2.56	5.59	8.15	0.91	5.02	5.93
Building Off Road Diesel	4.71	43.33	19.10	0.00	0.00	1.98	1.98	0.00	1.82	1.82
Building Vendor Trips	4.94	56.00	46.53	0.13	0.46	2.23	2.69	0.16	2.04	2.20
Building Worker Trips	10.32	19.29	336.71	0.47	2.10	1.38	3.48	0.76	1.16	1.92
Coating 06/01/2011-07/31/2012	126.90	0.26	4.60	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	126.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.14	0.26	4.60	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	10.67	70.43	47.56	0.01	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	10.50	70.12	42.15	0.00	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.17	0.31	5.41	0.01	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 6/1/2012-7/31/2012 Active Days: 43	137.57	70.69	52.16	0.01	0.06	5.44	5.50	0.02	5.00	5.02
Coating 06/01/2011-07/31/2012	126.90	0.26	4.60	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	126.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.14	0.26	4.60	0.01	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	10.67	70.43	47.56	0.01	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	10.50	70.12	42.15	0.00	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.17	0.31	5.41	0.01	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 8/1/2012-8/31/2012 Active Days: 23	10.67	70.43	47.56	0.01	0.03	5.42	5.45	0.01	4.99	5.00
Trenching 05/01/2011-08/31/2012	10.67	70.43	47.56	0.01	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	10.50	70.12	42.15	0.00	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.17	0.31	5.41	0.01	0.03	0.02	0.06	0.01	0.02	0.03

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 4/1/2009 - 7/31/2009 - Type Your Description Here

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 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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 4/1/2009 - 4/30/2011 - Default Mass Site Grading/Excavation Description

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 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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

APPENDIX B

URBEMIS Computer Model Output - Operational Impact Analysis

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: U:\UcJobs_02600-03000_02700\02719\Urbemis\2719 Ops.urb924

Project Name: The Avenue Operations

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
TOTALS (lbs/day, unmitigated)	16.82	4.69	8.03	0.00	0.03	0.03
TOTALS (lbs/day, mitigated)	16.75	3.76	7.60	0.00	0.03	0.03
Percent Reduction	0.42	19.83	5.35	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	21.74	30.95	245.27	0.35	54.74	10.86
TOTALS (lbs/day, mitigated)	21.25	30.17	239.03	0.33	53.36	10.58
Percent Reduction	2.25	2.52	2.54	5.71	2.52	2.58

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	38.56	35.64	253.30	0.35	54.77	10.89
TOTALS (lbs/day, mitigated)	38.00	33.93	246.63	0.33	53.39	10.61
Percent Reduction	1.45	4.80	2.63	5.71	2.52	2.57

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5
Natural Gas	0.35	4.62	2.17	0.00	0.01	0.01
Hearth - No Summer Emissions						
Landscape	0.75	0.07	5.86	0.00	0.02	0.02
Consumer Products	14.67					
Architectural Coatings	1.05					
TOTALS (lbs/day, unmitigated)	16.82	4.69	8.03	0.00	0.03	0.03

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5
Natural Gas	0.28	3.69	1.74	0.00	0.01	0.01
Hearth - No Summer Emissions						
Landscape	0.75	0.07	5.86	0.00	0.02	0.02
Consumer Products	14.67					
Architectural Coatings	1.05					
TOTALS (lbs/day, mitigated)	16.75	3.76	7.60	0.00	0.03	0.03

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

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 Summer Pounds Per Day, Unmitigated

9/8/2008 01:53:33 PM

Source	ROG	NOX	CO	SO2	PM10	PM25
Single family housing	4.13	5.88	47.42	0.07	10.42	2.07
Condo/townhouse general	9.63	13.01	104.90	0.15	23.04	4.57
Commercial	7.98	12.06	92.95	0.13	21.28	4.22
TOTALS (lbs/day, unmitigated)	21.74	30.95	245.27	0.35	54.74	10.86

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Single family housing	4.06	5.76	46.47	0.06	10.21	2.03
Condo/townhouse general	9.36	12.59	101.47	0.14	22.29	4.42
Commercial	7.83	11.82	91.09	0.13	20.86	4.13
TOTALS (lbs/day, mitigated)	21.25	30.17	239.03	0.33	53.36	10.58

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2015 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
Single family housing	20.67	9.57	dwelling units	62.00	593.34	5,994.40
Condo/townhouse general	14.00	5.86	dwelling units	224.00	1,312.64	13,261.34
Commercial		17.97	1000 sq ft	76.00	1,365.72	12,254.60
					3,271.70	31,510.34

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	46.0	0.2	99.8	0.0
Light Truck < 3750 lbs	10.0	1.0	96.0	3.0
Light Truck 3751-5750 lbs	21.0	0.5	99.5	0.0
Med Truck 5751-8500 lbs	11.5	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	81.0	19.0
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	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	4.3	48.8	51.2	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.4	0.0	92.9	7.1

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)						
Commercial				2.0	1.0	97.0

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: U:\UcJobs_02600-03000_02700\02719\Urbemis\2719 Ops.urb924

Project Name: The Avenue Operations

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
TOTALS (lbs/day, unmitigated)	16.17	6.37	2.92	0.01	0.15	0.15
TOTALS (lbs/day, mitigated)	16.10	5.44	2.49	0.01	0.15	0.15
Percent Reduction	0.43	14.60	14.73	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	23.48	36.77	237.32	0.29	54.74	10.86
TOTALS (lbs/day, mitigated)	22.90	35.83	231.30	0.28	53.36	10.58
Percent Reduction	2.47	2.56	2.54	3.45	2.52	2.58

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	39.65	43.14	240.24	0.30	54.89	11.01
TOTALS (lbs/day, mitigated)	39.00	41.27	233.79	0.29	53.51	10.73
Percent Reduction	1.64	4.33	2.68	3.33	2.51	2.54

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5
Natural Gas	0.35	4.62	2.17	0.00	0.01	0.01
Hearth	0.10	1.75	0.75	0.01	0.14	0.14
Landscaping - No Winter Emissions						
Consumer Products	14.67					
Architectural Coatings	1.05					
TOTALS (lbs/day, unmitigated)	16.17	6.37	2.92	0.01	0.15	0.15

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5
Natural Gas	0.28	3.69	1.74	0.00	0.01	0.01
Hearth	0.10	1.75	0.75	0.01	0.14	0.14
Landscaping - No Winter Emissions						
Consumer Products	14.67					
Architectural Coatings	1.05					
TOTALS (lbs/day, mitigated)	16.10	5.44	2.49	0.01	0.15	0.15

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

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
Single family housing	4.48	6.99	45.74	0.06	10.42	2.07
Condo/townhouse general	10.14	15.46	101.20	0.12	23.04	4.57
Commercial	8.86	14.32	90.38	0.11	21.28	4.22
TOTALS (lbs/day, unmitigated)	23.48	36.77	237.32	0.29	54.74	10.86

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25
Single family housing	4.39	6.85	44.83	0.05	10.21	2.03
Condo/townhouse general	9.82	14.95	97.90	0.12	22.29	4.42
Commercial	8.69	14.03	88.57	0.11	20.86	4.13
TOTALS (lbs/day, mitigated)	22.90	35.83	231.30	0.28	53.36	10.58

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2015 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
Single family housing	20.67	9.57	dwelling units	62.00	593.34	5,994.40
Condo/townhouse general	14.00	5.86	dwelling units	224.00	1,312.64	13,261.34
Commercial		17.97	1000 sq ft	76.00	1,365.72	12,254.60
					3,271.70	31,510.34

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	46.0	0.2	99.8	0.0
Light Truck < 3750 lbs	10.0	1.0	96.0	3.0
Light Truck 3751-5750 lbs	21.0	0.5	99.5	0.0
Med Truck 5751-8500 lbs	11.5	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	81.0	19.0
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	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	4.3	48.8	51.2	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.4	0.0	92.9	7.1

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)						
Commercial				2.0	1.0	97.0

APPENDIX C

LST Calculations

CONSTRUCTION UNMITIGATED

NO2

468.5	Emissions (lbs/day)
0.0073	ISCST3 Output
0.031635	Final Concentration

CO

204.21	Emissions (lbs/day)		
0.01199	ISCST3 Output (1-Hr)	0.00865	ISCST3 Output (8-Hr)
0.30606	Final Concentration (1-Hr)	0.220802063	Final Concentration (8-Hr)

PM10

6,400.00	Dust Emissions (lbs/day)	19.38	Exhust Emissions (lbs/day)
2.74469	ISCST3 Output (dust)	4.21682	ISCST3 Output (exhaust)

PM10 Calculation

$Cx = 0.9403\ C_o\ e^{-0.0462\ x}$

C_o^2	2.20E+03
e	0.0992613
x (meters)	50

C_x	215.16

CONSTRUCTION MITIGATED

NO2

215.9	Emissions (lbs/day)
0.0073	ISCST3 Output
0.014579	Final Concentration

CO

204.21	Emissions (lbs/day)		
0.01199	ISCST3 Output (1-Hr)	0.00865	ISCST3 Output (8-Hr)
0.30606	Final Concentration (1-Hr)	0.220802063	Final Concentration (8-Hr)

PM10

593.25	Dust Emissions (lbs/day)	8.89	Exhust Emissions (lbs/day)
2.74469	ISCST3 Output (dust)	4.21682	ISCST3 Output (exhaust)

PM10 Calculation

$Cx = 0.9403\ C_o\ e^{-0.0462\ x}$

C_o^2	2.04E+02
e	0.0992613
x (meters)	50

C_x	23.68

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: U:\UcJobs_02600-03000_02700\02719\Urbemis\2719 Construction LST.urb924

Project Name: The Avenue Construction LST

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

	NOx	CO	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
2008 TOTALS (lbs/day unmitigated)	88.45	44.40	101.67	4.55	106.22	21.15	4.18	25.34
2008 TOTALS (lbs/day mitigated)	88.45	44.40	101.67	4.55	106.22	21.15	4.18	25.34
2009 TOTALS (lbs/day unmitigated)	469.29	217.38	6,400.09	19.40	6,419.49	1,336.61	17.85	1,354.45
2009 TOTALS (lbs/day mitigated)	469.29	217.38	593.34	19.40	612.74	123.93	17.85	141.77
2010 TOTALS (lbs/day unmitigated)	438.30	199.85	6,400.06	17.96	6,418.02	1,336.60	16.52	1,353.12
2010 TOTALS (lbs/day mitigated)	438.30	199.85	593.31	17.96	611.27	123.92	16.52	140.43
2011 TOTALS (lbs/day unmitigated)	433.82	602.90	6,400.06	26.43	6,416.33	1,336.60	24.19	1,351.56
2011 TOTALS (lbs/day mitigated)	433.82	602.90	593.31	26.43	609.58	123.92	24.19	138.87
2012 TOTALS (lbs/day unmitigated)	189.32	454.50	2.62	11.03	13.65	0.94	10.02	10.96
2012 TOTALS (lbs/day mitigated)	189.32	454.50	2.62	11.03	13.65	0.94	10.02	10.96

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	NOx	CO	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
Time Slice 12/1/2008-12/31/2008 Active Days: 23	88.45	44.40	101.67	4.55	106.22	21.15	4.18	25.34
Demolition 12/01/2008-03/31/2009	88.45	44.40	101.67	4.55	106.22	21.15	4.18	25.34
Fugitive Dust	0.00	0.00	101.64	0.00	101.64	21.14	0.00	21.14
Demo Off Road Diesel	84.20	39.35	0.00	4.37	4.37	0.00	4.02	4.02
Demo On Road Diesel	4.03	1.49	0.02	0.17	0.18	0.01	0.16	0.16
Demo Worker Trips	0.22	3.56	0.02	0.01	0.03	0.01	0.01	0.01
Time Slice 1/1/2009-3/31/2009 Active Days: 64	83.49	42.36	101.67	4.29	105.96	21.15	3.94	25.10
Demolition 12/01/2008-03/31/2009	83.49	42.36	101.67	4.29	105.96	21.15	3.94	25.10
Fugitive Dust	0.00	0.00	101.64	0.00	101.64	21.14	0.00	21.14
Demo Off Road Diesel	79.51	37.69	0.00	4.12	4.12	0.00	3.79	3.79
Demo On Road Diesel	3.78	1.38	0.02	0.15	0.17	0.01	0.14	0.15
Demo Worker Trips	0.20	3.29	0.02	0.01	0.03	0.01	0.01	0.01
Time Slice 4/1/2009-7/31/2009 Active Days: 88	**469.29**	217.38	**6,400.09**	19.40	**6,419.49**	**1,336.61**	17.85	**1,354.45**
Fine Grading 04/01/2009-07/31/2009	5.60	2.04	0.02	0.23	0.25	0.01	0.21	0.22
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	5.60	2.04	0.02	0.23	0.25	0.01	0.21	0.22
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 04/01/2009-04/30/2011	463.69	215.34	6,400.06	19.17	6,419.24	1,336.60	17.64	1,354.24
Mass Grading Dust	0.00	0.00	6,400.00	0.00	6,400.00	1,336.58	0.00	1,336.58
Mass Grading Off Road Diesel	462.90	202.17	0.00	19.13	19.13	0.00	17.60	17.60
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.79	13.17	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 8/3/2009-12/31/2009 Active Days: 109	463.69	215.34	6,400.06	19.17	6,419.24	1,336.60	17.64	1,354.24
Mass Grading 04/01/2009-04/30/2011	463.69	215.34	6,400.06	19.17	6,419.24	1,336.60	17.64	1,354.24
Mass Grading Dust	0.00	0.00	6,400.00	0.00	6,400.00	1,336.58	0.00	1,336.58
Mass Grading Off Road Diesel	462.90	202.17	0.00	19.13	19.13	0.00	17.60	17.60
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Mass Grading Worker Trips	0.79	13.17	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 1/1/2010-12/31/2010 Active Days: 261	438.30	199.85	6,400.06	17.96	6,418.02	1,336.60	16.52	1,353.12
Mass Grading 04/01/2009-04/30/2011	438.30	199.85	6,400.06	17.96	6,418.02	1,336.60	16.52	1,353.12
Mass Grading Dust	0.00	0.00	6,400.00	0.00	6,400.00	1,336.58	0.00	1,336.58
Mass Grading Off Road Diesel	437.58	187.72	0.00	17.91	17.91	0.00	16.48	16.48
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.72	12.13	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 1/3/2011-4/29/2011 Active Days: 85	409.52	186.71	6,400.06	16.26	6,416.33	1,336.60	14.96	1,351.56
Mass Grading 04/01/2009-04/30/2011	409.52	186.71	6,400.06	16.26	6,416.33	1,336.60	14.96	1,351.56
Mass Grading Dust	0.00	0.00	6,400.00	0.00	6,400.00	1,336.58	0.00	1,336.58
Mass Grading Off Road Diesel	408.87	175.50	0.00	16.22	16.22	0.00	14.92	14.92
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.65	11.21	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 5/2/2011-5/31/2011 Active Days: 22	433.82	**602.90**	2.72	**26.43**	29.15	0.97	**24.19**	25.16
Asphalt 05/01/2011-05/31/2011	227.63	119.37	0.12	14.40	14.52	0.04	13.24	13.29
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	213.29	104.89	0.00	13.83	13.83	0.00	12.72	12.72
Paving On Road Diesel	13.79	5.05	0.07	0.53	0.61	0.02	0.49	0.51
Paving Worker Trips	0.55	9.42	0.05	0.04	0.09	0.02	0.03	0.05
Building 05/01/2011-05/31/2012	130.65	435.03	2.56	6.11	8.66	0.91	5.50	6.41
Building Off Road Diesel	46.65	19.88	0.00	2.20	2.20	0.00	2.03	2.03
Building Vendor Trips	62.81	50.56	0.46	2.52	2.98	0.16	2.31	2.47
Building Worker Trips	21.19	364.59	2.10	1.38	3.48	0.76	1.16	1.92
Trenching 05/01/2011-08/31/2012	75.54	48.50	0.03	5.93	5.96	0.01	5.45	5.46
Trenching Off Road Diesel	75.20	42.64	0.00	5.90	5.90	0.00	5.43	5.43
Trenching Worker Trips	0.34	5.86	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 6/1/2011-12/30/2011 Active Days: 153	206.47	488.52	2.62	12.05	14.67	0.94	10.96	11.90
Building 05/01/2011-05/31/2012	130.65	435.03	2.56	6.11	8.66	0.91	5.50	6.41
Building Off Road Diesel	46.65	19.88	0.00	2.20	2.20	0.00	2.03	2.03
Building Vendor Trips	62.81	50.56	0.46	2.52	2.98	0.16	2.31	2.47
Building Worker Trips	21.19	364.59	2.10	1.38	3.48	0.76	1.16	1.92
Coating 06/01/2011-07/31/2012	0.29	4.98	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.29	4.98	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	75.54	48.50	0.03	5.93	5.96	0.01	5.45	5.46
Trenching Off Road Diesel	75.20	42.64	0.00	5.90	5.90	0.00	5.43	5.43
Trenching Worker Trips	0.34	5.86	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 1/2/2012-5/31/2012 Active Days: 109	189.32	454.50	2.62	11.03	13.65	0.94	10.02	10.96
Building 05/01/2011-05/31/2012	118.62	402.34	2.56	5.59	8.15	0.91	5.02	5.93
Building Off Road Diesel	43.33	19.10	0.00	1.98	1.98	0.00	1.82	1.82
Building Vendor Trips	56.00	46.53	0.46	2.23	2.69	0.16	2.04	2.20
Building Worker Trips	19.29	336.71	2.10	1.38	3.48	0.76	1.16	1.92
Coating 06/01/2011-07/31/2012	0.26	4.60	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.26	4.60	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	70.43	47.56	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	70.12	42.15	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.31	5.41	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 6/1/2012-7/31/2012 Active Days: 43	70.69	52.16	0.06	5.44	5.50	0.02	5.00	5.02
Coating 06/01/2011-07/31/2012	0.26	4.60	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.26	4.60	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	70.43	47.56	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	70.12	42.15	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.31	5.41	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 8/1/2012-8/31/2012 Active Days: 23	70.43	47.56	0.03	5.42	5.45	0.01	4.99	5.00

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Trenching 05/01/2011-08/31/2012	70.43	47.56	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	70.12	42.15	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.31	5.41	0.03	0.02	0.06	0.01	0.02	0.03

Phase Assumptions

Phase: Demolition 12/1/2008 - 3/31/2009 - Default Demolition Description
Building Volume Total (cubic feet): 1000000
Building Volume Daily (cubic feet): 242000
On Road Truck Travel (VMT): 112.04
Off-Road Equipment:
1 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 8 hours per day
2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
4 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
4 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Fine Grading 4/1/2009 - 7/31/2009 - Type Your Description Here
Total Acres Disturbed: 0
Maximum Daily Acreage Disturbed: 0
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 165.91
Off-Road Equipment:

Phase: Mass Grading 4/1/2009 - 4/30/2011 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 202
Maximum Daily Acreage Disturbed: 50
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 50000 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 0
Off-Road Equipment:
18 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
4 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day
6 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
12 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
4 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 5/1/2011 - 8/31/2012 - Default Trenching Description
Off-Road Equipment:
4 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
4 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day
9 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
3 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
3 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 5/1/2011 - 5/31/2011 - Default Paving Description
Acres to be Paved: 32
Off-Road Equipment:
6 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
6 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
6 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
6 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
13 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

Phase: Building Construction 5/1/2011 - 5/31/2012 - Default Building Construction Description
Off-Road Equipment:
1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
1 Generator Sets (549 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 8 hours per day
1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 6/1/2011 - 7/31/2012 - Default Architectural Coating Description
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

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	NOx	CO	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
Time Slice 12/1/2008-12/31/2008 Active Days: 23	88.45	44.40	101.67	4.55	106.22	21.15	4.18	25.34
Demolition 12/01/2008-03/31/2009	88.45	44.40	101.67	4.55	106.22	21.15	4.18	25.34
Fugitive Dust	0.00	0.00	101.64	0.00	101.64	21.14	0.00	21.14
Demo Off Road Diesel	84.20	39.35	0.00	4.37	4.37	0.00	4.02	4.02
Demo On Road Diesel	4.03	1.49	0.02	0.17	0.18	0.01	0.16	0.16
Demo Worker Trips	0.22	3.56	0.02	0.01	0.03	0.01	0.01	0.01
Time Slice 1/1/2009-3/31/2009 Active Days: 64	83.49	42.36	101.67	4.29	105.96	21.15	3.94	25.10
Demolition 12/01/2008-03/31/2009	83.49	42.36	101.67	4.29	105.96	21.15	3.94	25.10
Fugitive Dust	0.00	0.00	101.64	0.00	101.64	21.14	0.00	21.14
Demo Off Road Diesel	79.51	37.69	0.00	4.12	4.12	0.00	3.79	3.79
Demo On Road Diesel	3.78	1.38	0.02	0.15	0.17	0.01	0.14	0.15
Demo Worker Trips	0.20	3.29	0.02	0.01	0.03	0.01	0.01	0.01
Time Slice 4/1/2009-7/31/2009 Active Days: 88	**469.29**	217.38	593.34	19.40	612.74	123.93	17.85	141.77
Fine Grading 04/01/2009-07/31/2009	5.60	2.04	0.02	0.23	0.25	0.01	0.21	0.22
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	5.60	2.04	0.02	0.23	0.25	0.01	0.21	0.22
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 04/01/2009-04/30/2011	463.69	215.34	593.31	19.17	612.49	123.92	17.64	141.55
Mass Grading Dust	0.00	0.00	593.25	0.00	593.25	123.89	0.00	123.89
Mass Grading Off Road Diesel	462.90	202.17	0.00	19.13	19.13	0.00	17.60	17.60
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.79	13.17	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 8/3/2009-12/31/2009 Active Days: 109	463.69	215.34	593.31	19.17	612.49	123.92	17.64	141.55
Mass Grading 04/01/2009-04/30/2011	463.69	215.34	593.31	19.17	612.49	123.92	17.64	141.55
Mass Grading Dust	0.00	0.00	593.25	0.00	593.25	123.89	0.00	123.89
Mass Grading Off Road Diesel	462.90	202.17	0.00	19.13	19.13	0.00	17.60	17.60
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.79	13.17	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 1/1/2010-12/31/2010 Active Days: 261	438.30	199.85	593.31	17.96	611.27	123.92	16.52	140.43
Mass Grading 04/01/2009-04/30/2011	438.30	199.85	593.31	17.96	611.27	123.92	16.52	140.43
Mass Grading Dust	0.00	0.00	593.25	0.00	593.25	123.89	0.00	123.89
Mass Grading Off Road Diesel	437.58	187.72	0.00	17.91	17.91	0.00	16.48	16.48
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.72	12.13	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 1/3/2011-4/29/2011 Active Days: 85	409.52	186.71	593.31	16.26	609.58	123.92	14.96	138.87
Mass Grading 04/01/2009-04/30/2011	409.52	186.71	593.31	16.26	609.58	123.92	14.96	138.87
Mass Grading Dust	0.00	0.00	593.25	0.00	593.25	123.89	0.00	123.89
Mass Grading Off Road Diesel	408.87	175.50	0.00	16.22	16.22	0.00	14.92	14.92
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.65	11.21	0.06	0.04	0.11	0.02	0.04	0.06
Time Slice 5/2/2011-5/31/2011 Active Days: 22	433.82	**602.90**	2.72	**26.43**	29.15	0.97	**24.19**	25.16
Asphalt 05/01/2011-05/31/2011	227.63	119.37	0.12	14.40	14.52	0.04	13.24	13.29
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	213.29	104.89	0.00	13.83	13.83	0.00	12.72	12.72
Paving On Road Diesel	13.79	5.05	0.07	0.53	0.61	0.02	0.49	0.51
Paving Worker Trips	0.55	9.42	0.05	0.04	0.09	0.02	0.03	0.05
Building 05/01/2011-05/31/2012	130.65	435.03	2.56	6.11	8.66	0.91	5.50	6.41
Building Off Road Diesel	46.65	19.88	0.00	2.20	2.20	0.00	2.03	2.03
Building Vendor Trips	62.81	50.56	0.46	2.52	2.98	0.16	2.31	2.47
Building Worker Trips	21.19	364.59	2.10	1.38	3.48	0.76	1.16	1.92
Trenching 05/01/2011-08/31/2012	75.54	48.50	0.03	5.93	5.96	0.01	5.45	5.46
Trenching Off Road Diesel	75.20	42.64	0.00	5.90	5.90	0.00	5.43	5.43

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Trenching Worker Trips	0.34	5.86	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 6/1/2011-12/30/2011 Active Days: 153	206.47	488.52	2.62	12.05	14.67	0.94	10.96	11.90
Building 05/01/2011-05/31/2012	130.65	435.03	2.56	6.11	8.66	0.91	5.50	6.41
Building Off Road Diesel	46.65	19.88	0.00	2.20	2.20	0.00	2.03	2.03
Building Vendor Trips	62.81	50.56	0.46	2.52	2.98	0.16	2.31	2.47
Building Worker Trips	21.19	364.59	2.10	1.38	3.48	0.76	1.16	1.92
Coating 06/01/2011-07/31/2012	0.29	4.98	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.29	4.98	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	75.54	48.50	0.03	5.93	5.96	0.01	5.45	5.46
Trenching Off Road Diesel	75.20	42.64	0.00	5.90	5.90	0.00	5.43	5.43
Trenching Worker Trips	0.34	5.86	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 1/2/2012-5/31/2012 Active Days: 109	189.32	454.50	2.62	11.03	13.65	0.94	10.02	10.96
Building 05/01/2011-05/31/2012	118.62	402.34	2.56	5.59	8.15	0.91	5.02	5.93
Building Off Road Diesel	43.33	19.10	0.00	1.98	1.98	0.00	1.82	1.82
Building Vendor Trips	56.00	46.53	0.46	2.23	2.69	0.16	2.04	2.20
Building Worker Trips	19.29	336.71	2.10	1.38	3.48	0.76	1.16	1.92
Coating 06/01/2011-07/31/2012	0.26	4.60	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.26	4.60	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	70.43	47.56	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	70.12	42.15	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.31	5.41	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 6/1/2012-7/31/2012 Active Days: 43	70.69	52.16	0.06	5.44	5.50	0.02	5.00	5.02
Coating 06/01/2011-07/31/2012	0.26	4.60	0.03	0.02	0.05	0.01	0.02	0.03
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.26	4.60	0.03	0.02	0.05	0.01	0.02	0.03
Trenching 05/01/2011-08/31/2012	70.43	47.56	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	70.12	42.15	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.31	5.41	0.03	0.02	0.06	0.01	0.02	0.03
Time Slice 8/1/2012-8/31/2012 Active Days: 23	70.43	47.56	0.03	5.42	5.45	0.01	4.99	5.00
Trenching 05/01/2011-08/31/2012	70.43	47.56	0.03	5.42	5.45	0.01	4.99	5.00
Trenching Off Road Diesel	70.12	42.15	0.00	5.40	5.40	0.00	4.97	4.97
Trenching Worker Trips	0.31	5.41	0.03	0.02	0.06	0.01	0.02	0.03

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 4/1/2009 - 7/31/2009 - Type Your Description Here

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 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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 4/1/2009 - 4/30/2011 - Default Mass Site Grading/Excavation Description

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 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 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

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**
** ISCST3 Input Produced by:
** ISC-AERMOD View Ver. 5.9.0
** Lakes Environmental Software Inc.
** Date: 9/5/2008
** File: C:\Documents and Settings\staff\Desktop\2719 Cons LST\CO.INP
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** ISCST3 Control Pathway
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CO STARTING
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   TITLETWO Construction CO
   MODELOPT CONC  URBAN NOCALM
   AVERTIME 1 8 PERIOD
   POLLUTID CO
   TERRHGTS FLAT
   FLAGPOLE 2.00
   RUNORNOT RUN
CO FINISHED
**
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** ISCST3 Source Pathway
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SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
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   LOCATION VOL9 VOLUME 380.000 429.400
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** Source Parameters **

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SRCPARAM VOL39 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL40 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL41 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL42 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL43 0.00104129688406333 5.000 9.302 2.330
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SRCPARAM VOL50 0.00104129688406333 5.000 9.302 2.330
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SRCPARAM VOL151 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL152 0.00104129688406333 5.000 9.302 2.330

** Variable Emissions Type: "By Hour-of-Day"
** Variable Emission Scenario: "Scenario 1"
EMISFACT VOL5 HROFDY 0 0 0 0 0 0
EMISFACT VOL5 HROFDY 0 1 1 1 1 1
EMISFACT VOL5 HROFDY 1 1 1 0 0 0
EMISFACT VOL5 HROFDY 0 0 0 0 0 0
EMISFACT VOL6 HROFDY 0 0 0 0 0 0
EMISFACT VOL6 HROFDY 0 1 1 1 1 1
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EMISFACT VOL8 HROFDY 0 0 0 0 0 0
EMISFACT VOL9 HROFDY 0 0 0 0 0 0

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EMISFACT VOL9 HROFDY 1 1 1 0 0 0

EMISFACT VOL9 HROFDY 0 0 0 0 0 0

EMISFACT VOL10 HROFDY 0 0 0 0 0 0

EMISFACT VOL10 HROFDY 0 1 1 1 1 1

EMISFACT VOL10 HROFDY 1 1 1 0 0 0

EMISFACT VOL10 HROFDY 0 0 0 0 0 0

EMISFACT VOL17 HROFDY 0 0 0 0 0 0

EMISFACT VOL17 HROFDY 0 1 1 1 1 1

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EMISFACT VOL17 HROFDY 0 0 0 0 0 0

EMISFACT VOL18 HROFDY 0 0 0 0 0 0

EMISFACT VOL18 HROFDY 0 1 1 1 1 1

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EMISFACT VOL18 HROFDY 0 0 0 0 0 0

EMISFACT VOL19 HROFDY 0 0 0 0 0 0

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CONCUNIT 873.2 CO PPM

SRCGROUP ALL

SO FINISHED

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** ISCST3 Receptor Pathway

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RE STARTING

** DESCRREC "FENCEGRD" "Receptors generated from Fenceline Grid"

DISCCART	181.20	612.75	2.00
DISCCART	156.16	587.71	2.00
DISCCART	223.43	620.03	2.00
DISCCART	247.94	620.00	2.00
DISCCART	272.46	619.96	2.00
DISCCART	296.97	619.92	2.00
DISCCART	321.49	619.89	2.00
DISCCART	346.00	619.85	2.00
DISCCART	370.52	619.81	2.00
DISCCART	395.03	619.78	2.00
DISCCART	419.55	619.74	2.00
DISCCART	444.06	619.70	2.00
DISCCART	468.58	619.67	2.00
DISCCART	493.09	619.63	2.00
DISCCART	517.61	619.59	2.00
DISCCART	542.12	619.56	2.00
DISCCART	566.64	619.52	2.00
DISCCART	591.15	619.48	2.00
DISCCART	615.67	619.45	2.00
DISCCART	640.18	619.41	2.00
DISCCART	682.80	587.07	2.00
DISCCART	690.11	544.97	2.00
DISCCART	690.11	520.52	2.00
DISCCART	690.11	496.08	2.00
DISCCART	690.11	471.64	2.00
DISCCART	690.11	447.20	2.00
DISCCART	690.11	422.75	2.00
DISCCART	690.11	398.31	2.00
DISCCART	690.11	373.87	2.00
DISCCART	690.11	349.42	2.00
DISCCART	690.11	324.98	2.00
DISCCART	690.11	300.54	2.00
DISCCART	690.11	276.10	2.00
DISCCART	690.11	251.65	2.00
DISCCART	690.11	227.21	2.00
DISCCART	690.11	202.77	2.00
DISCCART	690.11	178.33	2.00
DISCCART	690.11	153.88	2.00
DISCCART	690.11	129.44	2.00
DISCCART	657.74	86.75	2.00
DISCCART	615.56	79.48	2.00
DISCCART	591.08	79.51	2.00
DISCCART	566.60	79.55	2.00
DISCCART	542.12	79.59	2.00
DISCCART	517.64	79.62	2.00
DISCCART	493.16	79.66	2.00
DISCCART	468.68	79.70	2.00
DISCCART	444.20	79.73	2.00
DISCCART	419.73	79.77	2.00
DISCCART	395.25	79.81	2.00

DISCCART 370.77 79.84 2.00
DISCCART 346.29 79.88 2.00
DISCCART 321.81 79.92 2.00
DISCCART 297.33 79.95 2.00
DISCCART 272.85 79.99 2.00
DISCCART 248.37 80.03 2.00
DISCCART 223.89 80.06 2.00
DISCCART 199.42 80.10 2.00
DISCCART 156.81 112.39 2.00
DISCCART 149.45 154.47 2.00
DISCCART 149.42 178.91 2.00
DISCCART 149.38 203.35 2.00
DISCCART 149.35 227.80 2.00
DISCCART 149.31 252.24 2.00
DISCCART 149.27 276.68 2.00
DISCCART 149.24 301.13 2.00
DISCCART 149.20 325.57 2.00
DISCCART 149.17 350.01 2.00
DISCCART 149.13 374.45 2.00
DISCCART 149.09 398.90 2.00
DISCCART 149.06 423.34 2.00
DISCCART 149.02 447.78 2.00
DISCCART 148.98 472.23 2.00
DISCCART 148.95 496.67 2.00
DISCCART 148.91 521.11 2.00
DISCCART 148.88 545.55 2.00
RE FINISHED
**
****
** ISCST3 Meteorology Pathway
****
**
**
ME STARTING
INPUTFIL U:\UcAir\METDAT~1\Ontario\ont72.met
ANEMHGHT 10 METERS
SURFDATA 3102 1972
UAIRDATA 3102 1972
ME FINISHED
**
****
** ISCST3 Output Pathway
****
**
**
OU STARTING
RECTABLE ALLAVE 1ST
RECTABLE 1 1ST
RECTABLE 8 1ST
** Auto-Generated Plotfiles
PLOTFILE 1 ALL 1ST CO.IS\01H1GALL.PLT
PLOTFILE 8 ALL 1ST CO.IS\08H1GALL.PLT
PLOTFILE PERIOD ALL CO.IS\PE00GALL.PLT
OU FINISHED

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

CONC URBAN FLAT FLGPOL NOCALM

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Intermediate Terrain Processing is Selected

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

-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses User-Specified Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.

4. Not Use Calms Processing Routine.

5. Not Use Missing Data Processing Routine.

6. Default Wind Profile Exponents.

7. Default Vertical Potential Temperature Gradients.

**Model Assumes Receptors on FLAT Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

**Model Calculates 2 Short Term Average(s) of: 1-HR 8-HR

and Calculates PERIOD Averages

**This Run Includes: 121 Source(s); 1 Source Group(s); and 76 Receptor(s)

**The Model Assumes A Pollutant Type of: CO

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

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor

Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0

Emission Units = CO ; Emission Rate Unit Factor = 873.20

Output Units = PPM

**Approximate Storage Requirements of Model = 1.3 MB of RAM.

**Input Runstream File: CO.INP

**Output Print File: CO.OUT

CONC URBAN FLAT FLGPOL NOCALM

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL5	0	0.10413E-02	220.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL6	0	0.10413E-02	260.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL7	0	0.10413E-02	300.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL8	0	0.10413E-02	340.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL9	0	0.10413E-02	380.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL10	0	0.10413E-02	420.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL17	0	0.10413E-02	220.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL18	0	0.10413E-02	260.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL19	0	0.10413E-02	300.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL20	0	0.10413E-02	340.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL21	0	0.10413E-02	380.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL22	0	0.10413E-02	420.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL27	0	0.10413E-02	220.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL28	0	0.10413E-02	260.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL29	0	0.10413E-02	300.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL30	0	0.10413E-02	340.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL31	0	0.10413E-02	380.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL32	0	0.10413E-02	420.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL39	0	0.10413E-02	220.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL40	0	0.10413E-02	260.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL41	0	0.10413E-02	300.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL42	0	0.10413E-02	340.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL43	0	0.10413E-02	380.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL44	0	0.10413E-02	420.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL50	0	0.10413E-02	220.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL51	0	0.10413E-02	260.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL52	0	0.10413E-02	300.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL53	0	0.10413E-02	340.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL54	0	0.10413E-02	380.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL55	0	0.10413E-02	420.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL61	0	0.10413E-02	220.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL62	0	0.10413E-02	260.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL63	0	0.10413E-02	300.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL64	0	0.10413E-02	340.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL65	0	0.10413E-02	380.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL66	0	0.10413E-02	420.0	229.4	0.0	5.00	9.30	2.33	HROFDY

VOL67	0	0.10413E-02	219.8	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL68	0	0.10413E-02	260.0	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL69	0	0.10413E-02	300.2	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL70	0	0.10413E-02	340.4	189.5	0.0	5.00	9.30	2.33	HROFDY

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL71	0	0.10413E-02	380.7	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL72	0	0.10413E-02	420.9	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL73	0	0.10413E-02	460.3	189.2	0.0	5.00	9.30	2.33	HROFDY
VOL74	0	0.10413E-02	459.9	229.1	0.0	5.00	9.30	2.33	HROFDY
VOL75	0	0.10413E-02	459.9	269.0	0.0	5.00	9.30	2.33	HROFDY
VOL76	0	0.10413E-02	459.9	308.9	0.0	5.00	9.30	2.33	HROFDY
VOL78	0	0.10413E-02	459.9	348.8	0.0	5.00	9.30	2.33	HROFDY
VOL79	0	0.10413E-02	459.9	388.7	0.0	5.00	9.30	2.33	HROFDY
VOL80	0	0.10413E-02	459.9	428.6	0.0	5.00	9.30	2.33	HROFDY
VOL81	0	0.10413E-02	219.8	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL82	0	0.10413E-02	259.8	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL83	0	0.10413E-02	299.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL84	0	0.10413E-02	339.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL85	0	0.10413E-02	379.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL86	0	0.10413E-02	419.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL87	0	0.10413E-02	460.0	149.3	0.0	5.00	9.30	2.33	HROFDY
VOL88	0	0.10413E-02	500.2	149.3	0.0	5.00	9.30	2.33	HROFDY
VOL89	0	0.10413E-02	500.3	189.3	0.0	5.00	9.30	2.33	HROFDY
VOL90	0	0.10413E-02	499.9	229.3	0.0	5.00	9.30	2.33	HROFDY
VOL91	0	0.10413E-02	499.9	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL92	0	0.10413E-02	499.9	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL93	0	0.10413E-02	499.9	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL94	0	0.10413E-02	499.9	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL95	0	0.10413E-02	500.0	428.8	0.0	5.00	9.30	2.33	HROFDY
VOL96	0	0.10413E-02	540.0	428.8	0.0	5.00	9.30	2.33	
VOL97	0	0.10413E-02	580.0	428.8	0.0	5.00	9.30	2.33	
VOL98	0	0.10413E-02	620.0	428.8	0.0	5.00	9.30	2.33	
VOL99	0	0.10413E-02	540.0	389.4	0.0	5.00	9.30	2.33	
VOL100	0	0.10413E-02	580.0	389.4	0.0	5.00	9.30	2.33	
VOL101	0	0.10413E-02	620.0	389.4	0.0	5.00	9.30	2.33	
VOL102	0	0.10413E-02	540.0	349.4	0.0	5.00	9.30	2.33	
VOL103	0	0.10413E-02	580.0	349.4	0.0	5.00	9.30	2.33	
VOL104	0	0.10413E-02	620.0	349.4	0.0	5.00	9.30	2.33	
VOL105	0	0.10413E-02	540.0	309.4	0.0	5.00	9.30	2.33	
VOL106	0	0.10413E-02	580.0	309.4	0.0	5.00	9.30	2.33	
VOL107	0	0.10413E-02	620.0	309.4	0.0	5.00	9.30	2.33	
VOL108	0	0.10413E-02	540.0	269.4	0.0	5.00	9.30	2.33	
VOL109	0	0.10413E-02	580.0	269.4	0.0	5.00	9.30	2.33	
VOL110	0	0.10413E-02	620.0	269.4	0.0	5.00	9.30	2.33	
VOL111	0	0.10413E-02	540.0	229.3	0.0	5.00	9.30	2.33	

*** ISCST3 - VERSION 02035 *** *** The Avenue *** 09/05/08

*** Construction CO *** 17:02:10

**MODELOPTs: PAGE 4

CONC URBAN FLAT FLGPOL NOCALM

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL112	0	0.10413E-02	580.0	229.3	0.0	5.00	9.30	2.33	
VOL113	0	0.10413E-02	620.0	229.3	0.0	5.00	9.30	2.33	
VOL114	0	0.10413E-02	540.0	189.3	0.0	5.00	9.30	2.33	
VOL115	0	0.10413E-02	580.0	189.3	0.0	5.00	9.30	2.33	
VOL116	0	0.10413E-02	620.0	189.3	0.0	5.00	9.30	2.33	
VOL117	0	0.10413E-02	540.0	149.3	0.0	5.00	9.30	2.33	
VOL118	0	0.10413E-02	580.0	149.3	0.0	5.00	9.30	2.33	
VOL119	0	0.10413E-02	620.0	149.3	0.0	5.00	9.30	2.33	
VOL120	0	0.10413E-02	220.0	470.0	0.0	5.00	9.30	2.33	
VOL121	0	0.10413E-02	220.0	510.0	0.0	5.00	9.30	2.33	
VOL122	0	0.10413E-02	220.0	550.0	0.0	5.00	9.30	2.33	
VOL123	0	0.10413E-02	260.0	470.0	0.0	5.00	9.30	2.33	
VOL124	0	0.10413E-02	300.0	470.0	0.0	5.00	9.30	2.33	
VOL125	0	0.10413E-02	340.0	470.0	0.0	5.00	9.30	2.33	
VOL126	0	0.10413E-02	380.0	470.0	0.0	5.00	9.30	2.33	
VOL127	0	0.10413E-02	420.0	470.0	0.0	5.00	9.30	2.33	
VOL128	0	0.10413E-02	460.0	470.0	0.0	5.00	9.30	2.33	
VOL129	0	0.10413E-02	500.0	470.0	0.0	5.00	9.30	2.33	
VOL130	0	0.10413E-02	540.0	470.0	0.0	5.00	9.30	2.33	
VOL131	0	0.10413E-02	580.0	470.0	0.0	5.00	9.30	2.33	
VOL132	0	0.10413E-02	620.0	470.0	0.0	5.00	9.30	2.33	
VOL133	0	0.10413E-02	260.0	510.0	0.0	5.00	9.30	2.33	
VOL134	0	0.10413E-02	300.0	510.0	0.0	5.00	9.30	2.33	
VOL135	0	0.10413E-02	340.0	510.0	0.0	5.00	9.30	2.33	
VOL136	0	0.10413E-02	380.0	510.0	0.0	5.00	9.30	2.33	
VOL137	0	0.10413E-02	420.0	510.0	0.0	5.00	9.30	2.33	
VOL138	0	0.10413E-02	460.0	510.0	0.0	5.00	9.30	2.33	
VOL139	0	0.10413E-02	500.0	510.0	0.0	5.00	9.30	2.33	
VOL140	0	0.10413E-02	540.0	510.0	0.0	5.00	9.30	2.33	
VOL141	0	0.10413E-02	580.0	510.0	0.0	5.00	9.30	2.33	
VOL142	0	0.10413E-02	620.0	510.0	0.0	5.00	9.30	2.33	
VOL143	0	0.10413E-02	260.0	550.0	0.0	5.00	9.30	2.33	
VOL144	0	0.10413E-02	300.0	550.0	0.0	5.00	9.30	2.33	
VOL145	0	0.10413E-02	340.0	550.0	0.0	5.00	9.30	2.33	
VOL146	0	0.10413E-02	380.0	550.0	0.0	5.00	9.30	2.33	
VOL147	0	0.10413E-02	420.0	550.0	0.0	5.00	9.30	2.33	
VOL148	0	0.10413E-02	460.0	550.0	0.0	5.00	9.30	2.33	
VOL149	0	0.10413E-02	500.0	550.0	0.0	5.00	9.30	2.33	
VOL150	0	0.10413E-02	540.0	550.0	0.0	5.00	9.30	2.33	
VOL151	0	0.10413E-02	580.0	550.0	0.0	5.00	9.30	2.33	

*** ISCST3 - VERSION 02035 *** *** The Avenue *** 09/05/08

*** Construction CO *** 17:02:10

**MODELOPTs: PAGE 5

CONC URBAN FLAT FLGPOL NOCALM

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL152	0	0.10413E-02	620.0	550.0	0.0	5.00	9.30	2.33	

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

ALL VOL5 , VOL6 , VOL7 , VOL8 , VOL9 , VOL10 , VOL17 , VOL18 , VOL19 , VOL20 , VOL21 , VOL22 ,

VOL27 , VOL28 , VOL29 , VOL30 , VOL31 , VOL32 , VOL39 , VOL40 , VOL41 , VOL42 , VOL43 , VOL44 ,

VOL50 , VOL51 , VOL52 , VOL53 , VOL54 , VOL55 , VOL61 , VOL62 , VOL63 , VOL64 , VOL65 , VOL66 ,

VOL67 , VOL68 , VOL69 , VOL70 , VOL71 , VOL72 , VOL73 , VOL74 , VOL75 , VOL76 , VOL78 , VOL79 ,

VOL80 , VOL81 , VOL82 , VOL83 , VOL84 , VOL85 , VOL86 , VOL87 , VOL88 , VOL89 , VOL90 , VOL91 ,

VOL92 , VOL93 , VOL94 , VOL95 , VOL96 , VOL97 , VOL98 , VOL99 , VOL100 , VOL101 , VOL102 , VOL103 ,

VOL104 , VOL105 , VOL106 , VOL107 , VOL108 , VOL109 , VOL110 , VOL111 , VOL112 , VOL113 , VOL114 , VOL115 ,

VOL116 , VOL117 , VOL118 , VOL119 , VOL120 , VOL121 , VOL122 , VOL123 , VOL124 , VOL125 , VOL126 , VOL127 ,

VOL128 , VOL129 , VOL130 , VOL131 , VOL132 , VOL133 , VOL134 , VOL135 , VOL136 , VOL137 , VOL138 , VOL139 ,

VOL140 , VOL141 , VOL142 , VOL143 , VOL144 , VOL145 , VOL146 , VOL147 , VOL148 , VOL149 , VOL150 , VOL151 ,

VOL152 ,

* 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 = VOL5 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL6 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL7 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL8 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL9 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL18 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL19 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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 = VOL10 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL17 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

SOURCE ID = VOL20 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC   URBAN FLAT FLGPOL   NOCALM

* 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 = VOL21   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL22   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL27   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL28   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL29   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

CONC   URBAN FLAT FLGPOL   NOCALM

* 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 = VOL30   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL31   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL32 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL39 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL40 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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 = VOL41 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL42 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL43 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL44 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL50 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC URBAN FLAT FLGPOL NOCALM

* 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 = VOL51 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL52 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL53 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL54 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL55 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC URBAN FLAT FLGPOL NOCALM

* 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 = VOL61 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL62 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL63 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL64 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL65 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

CONC URBAN FLAT FLGPOL NOCALM

* 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 = VOL66 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL67 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL68 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL69 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL70 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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

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SOURCE ID = VOL71 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL72 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL73 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL74 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL75 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL79 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL80 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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 = VOL76 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL78 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

SOURCE ID = VOL81 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC URBAN FLAT FLGPOL NOCALM

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

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

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SOURCE ID = VOL82 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL83 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL84 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL85 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL86 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC URBAN FLAT FLGPOL NOCALM

* 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 = VOL87 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL88 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL89 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL90 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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 = VOL92 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL93 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

SOURCE ID = VOL91 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL94 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL95 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

*** ISCST3 - VERSION 02035 *** *** The Avenue *** 09/05/08
*** Construction CO *** 17:02:10
**MODELOPTs: PAGE 20
CONC URBAN FLAT FLGPOL NOCALM

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

(181.2, 612.8, 0.0, 2.0); (156.2, 587.7, 0.0, 2.0);
(223.4, 620.0, 0.0, 2.0); (247.9, 620.0, 0.0, 2.0);
(272.5, 620.0, 0.0, 2.0); (297.0, 619.9, 0.0, 2.0);
(321.5, 619.9, 0.0, 2.0); (346.0, 619.8, 0.0, 2.0);
(370.5, 619.8, 0.0, 2.0); (395.0, 619.8, 0.0, 2.0);
(419.5, 619.7, 0.0, 2.0); (444.1, 619.7, 0.0, 2.0);
(468.6, 619.7, 0.0, 2.0); (493.1, 619.6, 0.0, 2.0);
(517.6, 619.6, 0.0, 2.0); (542.1, 619.6, 0.0, 2.0);
(566.6, 619.5, 0.0, 2.0); (591.2, 619.5, 0.0, 2.0);
(615.7, 619.5, 0.0, 2.0); (640.2, 619.4, 0.0, 2.0);
(682.8, 587.1, 0.0, 2.0); (690.1, 545.0, 0.0, 2.0);
(690.1, 520.5, 0.0, 2.0); (690.1, 496.1, 0.0, 2.0);
(690.1, 471.6, 0.0, 2.0); (690.1, 447.2, 0.0, 2.0);
(690.1, 422.8, 0.0, 2.0); (690.1, 398.3, 0.0, 2.0);
(690.1, 373.9, 0.0, 2.0); (690.1, 349.4, 0.0, 2.0);
(690.1, 325.0, 0.0, 2.0); (690.1, 300.5, 0.0, 2.0);
(690.1, 276.1, 0.0, 2.0); (690.1, 251.6, 0.0, 2.0);
(690.1, 227.2, 0.0, 2.0); (690.1, 202.8, 0.0, 2.0);
(690.1, 178.3, 0.0, 2.0); (690.1, 153.9, 0.0, 2.0);
(690.1, 129.4, 0.0, 2.0); (657.7, 86.8, 0.0, 2.0);
(615.6, 79.5, 0.0, 2.0); (591.1, 79.5, 0.0, 2.0);
(566.6, 79.6, 0.0, 2.0); (542.1, 79.6, 0.0, 2.0);
(517.6, 79.6, 0.0, 2.0); (493.2, 79.7, 0.0, 2.0);
(468.7, 79.7, 0.0, 2.0); (444.2, 79.7, 0.0, 2.0);
(419.7, 79.8, 0.0, 2.0); (395.3, 79.8, 0.0, 2.0);
(370.8, 79.8, 0.0, 2.0); (346.3, 79.9, 0.0, 2.0);
(321.8, 79.9, 0.0, 2.0); (297.3, 79.9, 0.0, 2.0);
(272.9, 80.0, 0.0, 2.0); (248.4, 80.0, 0.0, 2.0);
(223.9, 80.1, 0.0, 2.0); (199.4, 80.1, 0.0, 2.0);
(156.8, 112.4, 0.0, 2.0); (149.4, 154.5, 0.0, 2.0);
(149.4, 178.9, 0.0, 2.0); (149.4, 203.4, 0.0, 2.0);
(149.4, 227.8, 0.0, 2.0); (149.3, 252.2, 0.0, 2.0);
(149.3, 276.7, 0.0, 2.0); (149.2, 301.1, 0.0, 2.0);
(149.2, 325.6, 0.0, 2.0); (149.2, 350.0, 0.0, 2.0);
(149.1, 374.5, 0.0, 2.0); (149.1, 398.9, 0.0, 2.0);
(149.1, 423.3, 0.0, 2.0); (149.0, 447.8, 0.0, 2.0);
(149.0, 472.2, 0.0, 2.0); (148.9, 496.7, 0.0, 2.0);
(148.9, 521.1, 0.0, 2.0); (148.9, 545.5, 0.0, 2.0);

*** ISCST3 - VERSION 02035 *** *** The Avenue *** 09/05/08
*** Construction CO *** 17:02:10
**MODELOPTs: PAGE 21
CONC URBAN FLAT FLGPOL NOCALM

*** 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

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,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
B	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
C	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00
D	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00
E	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00
F	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00

D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

CONC URBAN FLAT FLGPOL NOCALM

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

FILE: U:\UcAir\METDAT~1\Ontario\ont72.met

FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)

SURFACE STATION NO.: 3102 UPPER AIR STATION NO.: 3102

NAME: UNKNOWN NAME: UNKNOWN

YEAR: 1972 YEAR: 1972

YR MN DY HR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
72 01 01 01	171.0	3.09	280.4	6	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 02	178.0	5.66	277.0	5	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 03	174.0	5.66	277.0	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 04	183.0	4.12	277.0	5	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 05	173.0	2.57	274.8	6	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 06	172.0	6.17	274.8	5	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 07	195.0	3.09	274.8	6	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 08	183.0	5.14	277.6	5	68.0	436.0	0.0000	0.0	0.0000	0	0.00
72 01 01 09	67.0	2.57	282.6	4	198.0	505.0	0.0000	0.0	0.0000	0	0.00
72 01 01 10	101.0	4.12	286.5	3	329.0	574.0	0.0000	0.0	0.0000	0	0.00
72 01 01 11	154.0	4.63	289.8	3	459.0	643.0	0.0000	0.0	0.0000	0	0.00
72 01 01 12	116.0	4.12	293.7	3	589.0	712.0	0.0000	0.0	0.0000	0	0.00
72 01 01 13	103.0	5.14	293.7	4	720.0	781.0	0.0000	0.0	0.0000	0	0.00
72 01 01 14	109.0	5.14	294.3	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 15	102.0	5.14	293.7	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 16	114.0	5.14	293.7	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 17	71.0	3.60	290.9	5	850.0	840.0	0.0000	0.0	0.0000	0	0.00
72 01 01 18	37.0	3.60	288.2	5	850.0	777.0	0.0000	0.0	0.0000	0	0.00
72 01 01 19	174.0	6.69	284.3	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 20	117.0	4.12	284.3	5	850.0	651.0	0.0000	0.0	0.0000	0	0.00
72 01 01 21	180.0	5.66	280.4	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 22	202.0	4.12	282.0	5	850.0	526.0	0.0000	0.0	0.0000	0	0.00
72 01 01 23	100.0	4.63	281.5	5	850.0	463.0	0.0000	0.0	0.0000	0	0.00
72 01 01 24	180.0	2.57	280.9	6	850.0	400.0	0.0000	0.0	0.0000	0	0.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.

FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

CONC URBAN FLAT FLGPOL NOCALM

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): VOL5 , VOL6 , VOL7 , VOL8 , VOL9 , VOL10 , VOL17 ,

VOL18 , VOL19 , VOL20 , VOL21 , VOL22 , VOL27 , VOL28 , VOL29 , VOL30 , VOL31 , VOL32 , VOL39 ,

VOL40 , VOL41 , VOL42 , VOL43 , VOL44 , VOL50 , VOL51 , VOL52 , VOL53 , VOL54 , VOL55 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN PPM **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
181.20	612.75	0.00017	156.16	587.71	0.00015
223.43	620.03	0.00027	247.94	620.00	0.00033
272.46	619.96	0.00038	296.97	619.92	0.00043
321.49	619.89	0.00048	346.00	619.85	0.00052
370.52	619.81	0.00055	395.03	619.78	0.00058
419.55	619.74	0.00061	444.06	619.70	0.00063
468.58	619.67	0.00065	493.09	619.63	0.00067

517.61	619.59	0.00069	542.12	619.56	0.00071
566.64	619.52	0.00072	591.15	619.48	0.00071
615.67	619.45	0.00069	640.18	619.41	0.00064
682.80	587.07	0.00068	690.11	544.97	0.00079
690.11	520.52	0.00081	690.11	496.08	0.00080
690.11	471.64	0.00080	690.11	447.20	0.00078
690.11	422.75	0.00077	690.11	398.31	0.00076
690.11	373.87	0.00075	690.11	349.42	0.00074
690.11	324.98	0.00074	690.11	300.54	0.00073
690.11	276.10	0.00071	690.11	251.65	0.00069
690.11	227.21	0.00065	690.11	202.77	0.00060
690.11	178.33	0.00053	690.11	153.88	0.00044
690.11	129.44	0.00034	657.74	86.75	0.00045
615.56	79.48	0.00088	591.08	79.51	0.00100
566.60	79.55	0.00104	542.12	79.59	0.00100
517.64	79.62	0.00081	493.16	79.66	0.00063
468.68	79.70	0.00054	444.20	79.73	0.00049
419.73	79.77	0.00045	395.25	79.81	0.00043
370.77	79.84	0.00041	346.29	79.88	0.00039
321.81	79.92	0.00038	297.33	79.95	0.00036
272.85	79.99	0.00034	248.37	80.03	0.00031
223.89	80.06	0.00028	199.42	80.10	0.00023
156.81	112.39	0.00018	149.45	154.47	0.00019
149.42	178.91	0.00020	149.38	203.35	0.00021
149.35	227.80	0.00021	149.31	252.24	0.00022
149.27	276.68	0.00023	149.24	301.13	0.00023
149.20	325.57	0.00024	149.17	350.01	0.00025
149.13	374.45	0.00025	149.09	398.90	0.00025
149.06	423.34	0.00025	149.02	447.78	0.00025
148.98	472.23	0.00024	148.95	496.67	0.00023
148.91	521.11	0.00021	148.88	545.55	0.00018

CONC   URBAN FLAT FLGPOL   NOCALM

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): VOL5 , VOL6 , VOL7 , VOL8 , VOL9 , VOL10 , VOL17 ,

VOL18 , VOL19 , VOL20 , VOL21 , VOL22 , VOL27 , VOL28 , VOL29 , VOL30 , VOL31 , VOL32 , VOL39 ,

VOL40 , VOL41 , VOL42 , VOL43 , VOL44 , VOL50 , VOL51 , VOL52 , VOL53 , VOL54 , VOL55 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN PPM **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
181.20	612.75	0.00844	(72072921)	156.16	587.71	0.00988	(72081005)
223.43	620.03	0.01107	(72112508)	247.94	620.00	0.01135	(72112508)
272.46	619.96	0.01118	(72112508)	296.97	619.92	0.01128	(72112809)
321.49	619.89	0.01134	(72112508)	346.00	619.85	0.01124	(72112708)
370.52	619.81	0.01136	(72112508)	395.03	619.78	0.01123	(72112508)
419.55	619.74	0.01132	(72112708)	444.06	619.70	0.01130	(72112508)
468.58	619.67	0.01120	(72112708)	493.09	619.63	0.01125	(72112809)
517.61	619.59	0.01102	(72112708)	542.12	619.56	0.01124	(72112708)
566.64	619.52	0.01088	(72112708)	591.15	619.48	0.01048	(72112708)
615.67	619.45	0.01020	(72071223)	640.18	619.41	0.00977	(72071302)
682.80	587.07	0.00877	(72072123)	690.11	544.97	0.01019	(72102320)
690.11	520.52	0.01038	(72080824)	690.11	496.08	0.01031	(72082702)
690.11	471.64	0.01030	(72092723)	690.11	447.20	0.01008	(72081503)
690.11	422.75	0.00983	(72102618)	690.11	398.31	0.00917	(72102618)
690.11	373.87	0.00934	(72061122)	690.11	349.42	0.00915	(72102420)
690.11	324.98	0.00888	(72112118)	690.11	300.54	0.00859	(72112118)
690.11	276.10	0.00848	(72111523)	690.11	251.65	0.00836	(72111522)
690.11	227.21	0.00826	(72090323)	690.11	202.77	0.00818	(72080805)
690.11	178.33	0.00830	(72102108)	690.11	153.88	0.00872	(72102108)
690.11	129.44	0.00913	(72102108)	657.74	86.75	0.01199	(72102108)
615.56	79.48	0.01184	(72102108)	591.08	79.51	0.01173	(72102108)
566.60	79.55	0.01173	(72102108)	542.12	79.59	0.01160	(72102108)
517.64	79.62	0.01138	(72102108)	493.16	79.66	0.01129	(72101508)
468.68	79.70	0.01130	(72112308)	444.20	79.73	0.01132	(72102408)
419.73	79.77	0.01132	(72101508)	395.25	79.81	0.01140	(72111808)
370.77	79.84	0.01136	(72102408)	346.29	79.88	0.01136	(72111808)
321.81	79.92	0.01149	(72111808)	297.33	79.95	0.01133	(72111808)
272.85	79.99	0.01147	(72111808)	248.37	80.03	0.01143	(72111808)
223.89	80.06	0.01135	(72111808)	199.42	80.10	0.01138	(72111808)
156.81	112.39	0.00711	(72111808)	149.45	154.47	0.00713	(72110208)
149.42	178.91	0.00735	(72110208)	149.38	203.35	0.00723	(72110208)

149.35	227.80	0.00728 (72110208)	149.31	252.24	0.00732 (72110208)
149.27	276.68	0.00720 (72110208)	149.24	301.13	0.00734 (72110208)
149.20	325.57	0.00724 (72110208)	149.17	350.01	0.00724 (72110208)
149.13	374.45	0.00729 (72110208)	149.09	398.90	0.00710 (72110208)
149.06	423.34	0.00789 (72031206)	149.02	447.78	0.00958 (72101407)
148.98	472.23	0.01026 (72102001)	148.95	496.67	0.01047 (72100305)
148.91	521.11	0.01066 (72012605)	148.88	545.55	0.01053 (72011802)

CONC URBAN FLAT FLGPOL NOCALM

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): VOL5 , VOL6 , VOL7 , VOL8 , VOL9 , VOL10 , VOL17 ,

VOL18 , VOL19 , VOL20 , VOL21 , VOL22 , VOL27 , VOL28 , VOL29 , VOL30 , VOL31 , VOL32 , VOL39 ,

VOL40 , VOL41 , VOL42 , VOL43 , VOL44 , VOL50 , VOL51 , VOL52 , VOL53 , VOL54 , VOL55 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN PPM **

X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC (YYMMDDHH)
181.20	612.75	0.00318 (72081008)	156.16	587.71	0.00426 (72081008)
223.43	620.03	0.00419 (72092908)	247.94	620.00	0.00436 (72092908)
272.46	619.96	0.00420 (72092908)	296.97	619.92	0.00435 (72092908)
321.49	619.89	0.00431 (72092908)	346.00	619.85	0.00428 (72092908)
370.52	619.81	0.00451 (72092908)	395.03	619.78	0.00450 (72092908)
419.55	619.74	0.00491 (72092908)	444.06	619.70	0.00549 (72092908)
468.58	619.67	0.00625 (72092908)	493.09	619.63	0.00751 (72092908)
517.61	619.59	0.00822 (72092908)	542.12	619.56	0.00847 (72092908)
566.64	619.52	0.00809 (72092908)	591.15	619.48	0.00678 (72092908)
615.67	619.45	0.00509 (72112708)	640.18	619.41	0.00492 (72070608)
682.80	587.07	0.00626 (72070208)	690.11	544.97	0.00560 (72082708)
690.11	520.52	0.00629 (72082708)	690.11	496.08	0.00633 (72082708)
690.11	471.64	0.00630 (72092808)	690.11	447.20	0.00612 (72092808)
690.11	422.75	0.00561 (72092808)	690.11	398.31	0.00469 (72092808)
690.11	373.87	0.00454 (72070608)	690.11	349.42	0.00438 (72070608)
690.11	324.98	0.00415 (72070608)	690.11	300.54	0.00404 (72070208)
690.11	276.10	0.00420 (72080808)	690.11	251.65	0.00433 (72080808)
690.11	227.21	0.00443 (72080808)	690.11	202.77	0.00446 (72080808)
690.11	178.33	0.00447 (72080808)	690.11	153.88	0.00445 (72080808)
690.11	129.44	0.00435 (72080808)	657.74	86.75	0.00468 (72091908)
615.56	79.48	0.00797 (72101608)	591.08	79.51	0.00865 (72101608)
566.60	79.55	0.00849 (72101608)	542.12	79.59	0.00800 (72082908)
517.64	79.62	0.00673 (72082908)	493.16	79.66	0.00502 (72083008)
468.68	79.70	0.00397 (72111808)	444.20	79.73	0.00345 (72111808)
419.73	79.77	0.00307 (72111808)	395.25	79.81	0.00304 (72101216)
370.77	79.84	0.00305 (72101216)	346.29	79.88	0.00307 (72101216)
321.81	79.92	0.00307 (72101216)	297.33	79.95	0.00307 (72101216)
272.85	79.99	0.00304 (72101216)	248.37	80.03	0.00297 (72101216)
223.89	80.06	0.00278 (72101216)	199.42	80.10	0.00232 (72101216)
156.81	112.39	0.00215 (72101708)	149.45	154.47	0.00217 (72101708)
149.42	178.91	0.00219 (72101708)	149.38	203.35	0.00223 (72101708)
149.35	227.80	0.00229 (72101708)	149.31	252.24	0.00241 (72101708)
149.27	276.68	0.00258 (72101708)	149.24	301.13	0.00280 (72101708)
149.20	325.57	0.00308 (72101708)	149.17	350.01	0.00340 (72101708)
149.13	374.45	0.00378 (72101708)	149.09	398.90	0.00426 (72101708)
149.06	423.34	0.00468 (72101708)	149.02	447.78	0.00509 (72102008)
148.98	472.23	0.00749 (72102008)	148.95	496.67	0.00805 (72102008)
148.91	521.11	0.00788 (72102008)	148.88	545.55	0.00697 (72102008)

*** ISCST3 - VERSION 02035 *** *** The Avenue *** 09/05/08
*** Construction CO *** 17:02:10
**MODELOPTs: PAGE 26
CONC URBAN FLAT FLGPOL NOCALM

*** THE SUMMARY OF MAXIMUM PERIOD (8784 HRS) RESULTS ***

** CONC OF CO IN PPM **

GROUP ID		AVERAGE CONC		RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.00104	AT (	566.60,	79.55,	0.00,	2.00)	DC	NA
	2ND HIGHEST VALUE IS	0.00100	AT (	591.08,	79.51,	0.00,	2.00)	DC	NA
	3RD HIGHEST VALUE IS	0.00100	AT (	542.12,	79.59,	0.00,	2.00)	DC	NA
	4TH HIGHEST VALUE IS	0.00088	AT (	615.56,	79.48,	0.00,	2.00)	DC	NA
	5TH HIGHEST VALUE IS	0.00081	AT (	517.64,	79.62,	0.00,	2.00)	DC	NA
	6TH HIGHEST VALUE IS	0.00081	AT (	690.11,	520.52,	0.00,	2.00)	DC	NA
	7TH HIGHEST VALUE IS	0.00080	AT (	690.11,	496.08,	0.00,	2.00)	DC	NA
	8TH HIGHEST VALUE IS	0.00080	AT (	690.11,	471.64,	0.00,	2.00)	DC	NA
	9TH HIGHEST VALUE IS	0.00079	AT (	690.11,	544.97,	0.00,	2.00)	DC	NA
	10TH HIGHEST VALUE IS	0.00078	AT (	690.11,	447.20,	0.00,	2.00)	DC	NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** ISCST3 - VERSION 02035 *** *** The Avenue *** 09/05/08
*** Construction CO *** 17:02:10
**MODELOPTs: PAGE 27
CONC URBAN FLAT FLGPOL NOCALM

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF CO IN PPM **

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

ALL HIGH 1ST HIGH VALUE IS 0.01199 ON 72102108: AT (657.74, 86.75, 0.00, 2.00) DC NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** ISCST3 - VERSION 02035 *** *** The Avenue *** 09/05/08
*** Construction CO *** 17:02:10
**MODELOPTs: PAGE 28
CONC URBAN FLAT FLGPOL NOCALM

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF CO IN PPM **

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

ALL HIGH 1ST HIGH VALUE IS 0.00865 ON 72101608: AT (591.08, 79.51, 0.00, 2.00) DC NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

****
*** ISCST3 Finishes Successfully ***
****

*** Message Summary : ISCST3 Model Execution ***

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

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 812 Informational Message(s)

A Total of 812 Calm Hours Identified

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

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

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**
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**
** ISCST3 Input Produced by:
** ISC-AERMOD View Ver. 5.9.0
** Lakes Environmental Software Inc.
** Date: 9/5/2008
** File: C:\Documents and Settings\staff\Desktop\2719 Cons LST\NO2.INP
**
****************************************
**
**
****************************************
** ISCST3 Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE The Avenue
   TITLETWO Construction NO2
   MODELOPT CONC  URBAN NOCALM
   AVERTIME 1
   POLLUTID NOX
   TERRHGTS FLAT
   FLAGPOLE 2.00
   RUNORNOT RUN
CO FINISHED
**
****************************************
** ISCST3 Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL5 VOLUME 220.000 429.400
   LOCATION VOL6 VOLUME 260.000 429.400
   LOCATION VOL7 VOLUME 300.000 429.400
   LOCATION VOL8 VOLUME 340.000 429.400
   LOCATION VOL9 VOLUME 380.000 429.400
   LOCATION VOL10 VOLUME 420.000 429.400
   LOCATION VOL17 VOLUME 220.000 389.400
   LOCATION VOL18 VOLUME 260.000 389.400
   LOCATION VOL19 VOLUME 300.000 389.400
   LOCATION VOL20 VOLUME 340.000 389.400
   LOCATION VOL21 VOLUME 380.000 389.400
   LOCATION VOL22 VOLUME 420.000 389.400
   LOCATION VOL27 VOLUME 220.000 349.400
   LOCATION VOL28 VOLUME 260.000 349.400
   LOCATION VOL29 VOLUME 300.000 349.400
   LOCATION VOL30 VOLUME 340.000 349.400
   LOCATION VOL31 VOLUME 380.000 349.400
   LOCATION VOL32 VOLUME 420.000 349.400
   LOCATION VOL39 VOLUME 220.000 309.400
   LOCATION VOL40 VOLUME 260.000 309.400
   LOCATION VOL41 VOLUME 300.000 309.400
   LOCATION VOL42 VOLUME 340.000 309.400
   LOCATION VOL43 VOLUME 380.000 309.400
   LOCATION VOL44 VOLUME 420.000 309.400
   LOCATION VOL50 VOLUME 220.000 269.400
   LOCATION VOL51 VOLUME 260.000 269.400
   LOCATION VOL52 VOLUME 300.000 269.400
   LOCATION VOL53 VOLUME 340.000 269.400
   LOCATION VOL54 VOLUME 380.000 269.400
   LOCATION VOL55 VOLUME 420.000 269.400
   LOCATION VOL61 VOLUME 220.000 229.400
   LOCATION VOL62 VOLUME 260.000 229.400
   LOCATION VOL63 VOLUME 300.000 229.400
   LOCATION VOL64 VOLUME 340.000 229.400
   LOCATION VOL65 VOLUME 380.000 229.400
   LOCATION VOL66 VOLUME 420.000 229.400
   LOCATION VOL67 VOLUME 219.790 189.500
   LOCATION VOL68 VOLUME 260.010 189.500
   LOCATION VOL69 VOLUME 300.220 189.500
   LOCATION VOL70 VOLUME 340.440 189.500
   LOCATION VOL71 VOLUME 380.660 189.500
   LOCATION VOL72 VOLUME 420.880 189.500
   LOCATION VOL73 VOLUME 460.320 189.190
   LOCATION VOL74 VOLUME 459.890 229.090
   LOCATION VOL75 VOLUME 459.890 268.990
   LOCATION VOL76 VOLUME 459.890 308.890
   LOCATION VOL78 VOLUME 459.890 348.790
   LOCATION VOL79 VOLUME 459.900 388.690
   LOCATION VOL80 VOLUME 459.890 428.590
   LOCATION VOL81 VOLUME 219.790 149.480
   LOCATION VOL82 VOLUME 259.820 149.480
   LOCATION VOL83 VOLUME 299.850 149.480
   LOCATION VOL84 VOLUME 339.880 149.480
   LOCATION VOL85 VOLUME 379.910 149.480
   LOCATION VOL86 VOLUME 419.940 149.480
   LOCATION VOL87 VOLUME 459.970 149.260
   LOCATION VOL88 VOLUME 500.220 149.260
   LOCATION VOL89 VOLUME 500.330 189.290
   LOCATION VOL90 VOLUME 499.880 229.320
   LOCATION VOL91 VOLUME 499.880 269.350
   LOCATION VOL92 VOLUME 499.870 309.380
   LOCATION VOL93 VOLUME 499.870 349.400
   LOCATION VOL94 VOLUME 499.870 389.430
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LOCATION VOL95 VOLUME 499.980 428.780
LOCATION VOL96 VOLUME 540.000 428.780
LOCATION VOL97 VOLUME 580.000 428.780
LOCATION VOL98 VOLUME 620.000 428.780
LOCATION VOL99 VOLUME 540.000 389.430
LOCATION VOL100 VOLUME 580.000 389.430
LOCATION VOL101 VOLUME 620.000 389.430
LOCATION VOL102 VOLUME 540.000 349.400
LOCATION VOL103 VOLUME 580.000 349.400
LOCATION VOL104 VOLUME 620.000 349.400
LOCATION VOL105 VOLUME 540.000 309.380
LOCATION VOL106 VOLUME 580.000 309.380
LOCATION VOL107 VOLUME 620.000 309.380
LOCATION VOL108 VOLUME 540.000 269.350
LOCATION VOL109 VOLUME 580.000 269.350
LOCATION VOL110 VOLUME 620.000 269.350
LOCATION VOL111 VOLUME 540.000 229.320
LOCATION VOL112 VOLUME 580.000 229.320
LOCATION VOL113 VOLUME 620.000 229.320
LOCATION VOL114 VOLUME 540.000 189.290
LOCATION VOL115 VOLUME 580.000 189.290
LOCATION VOL116 VOLUME 620.000 189.290
LOCATION VOL117 VOLUME 540.000 149.260
LOCATION VOL118 VOLUME 580.000 149.260
LOCATION VOL119 VOLUME 620.000 149.260

LOCATION VOL120 VOLUME 220.000 470.000
LOCATION VOL121 VOLUME 220.000 510.000
LOCATION VOL122 VOLUME 220.000 550.000
LOCATION VOL123 VOLUME 260.000 470.000
LOCATION VOL124 VOLUME 300.000 470.000
LOCATION VOL125 VOLUME 340.000 470.000
LOCATION VOL126 VOLUME 380.000 470.000
LOCATION VOL127 VOLUME 420.000 470.000
LOCATION VOL128 VOLUME 460.000 470.000
LOCATION VOL129 VOLUME 500.000 470.000
LOCATION VOL130 VOLUME 540.000 470.000
LOCATION VOL131 VOLUME 580.000 470.000
LOCATION VOL132 VOLUME 620.000 470.000
LOCATION VOL133 VOLUME 260.000 510.000
LOCATION VOL134 VOLUME 300.000 510.000
LOCATION VOL135 VOLUME 340.000 510.000
LOCATION VOL136 VOLUME 380.000 510.000
LOCATION VOL137 VOLUME 420.000 510.000
LOCATION VOL138 VOLUME 460.000 510.000
LOCATION VOL139 VOLUME 500.000 510.000
LOCATION VOL140 VOLUME 540.000 510.000
LOCATION VOL141 VOLUME 580.000 510.000
LOCATION VOL142 VOLUME 620.000 510.000
LOCATION VOL143 VOLUME 260.000 550.000
LOCATION VOL144 VOLUME 300.000 550.000

LOCATION VOL145 VOLUME 340.000 550.000
LOCATION VOL146 VOLUME 380.000 550.000
LOCATION VOL147 VOLUME 420.000 550.000
LOCATION VOL148 VOLUME 460.000 550.000
LOCATION VOL149 VOLUME 500.000 550.000
LOCATION VOL150 VOLUME 540.000 550.000
LOCATION VOL151 VOLUME 580.000 550.000
LOCATION VOL152 VOLUME 620.000 550.000
** Source Parameters **
SRCPARAM VOL5 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL6 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL7 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL8 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL9 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL10 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL17 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL18 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL19 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL20 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL21 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL22 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL27 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL28 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL29 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL30 0.00104129688406333 5.000 9.302 2.330

SRCPARAM VOL31 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL32 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL39 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL40 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL41 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL42 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL43 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL44 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL50 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL51 0.00104129688406333 5.000 9.302 2.330
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SRCPARAM VOL70 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL71 0.00104129688406333 5.000 9.302 2.330

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SRCPARAM VOL73 0.00104129688406333 5.000 9.302 2.330
SRCPARAM VOL74 0.00104129688406333 5.000 9.302 2.330
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SRCPARAM VOL152 0.00104129688406333 5.000 9.302 2.330

** Variable Emissions Type: "By Hour-of-Day"
** Variable Emission Scenario: "Scenario 1"
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EMISFACT VOL5 HROFDY 0 0 0 0 0 0
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EMISFACT VOL8 HROFDY 0 0 0 0 0 0
EMISFACT VOL9 HROFDY 0 0 0 0 0 0
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EMISFACT VOL9 HROFDY 0 1 1 1 1 1

EMISFACT VOL9 HROFDY 1 1 1 0 0 0

EMISFACT VOL9 HROFDY 0 0 0 0 0 0

EMISFACT VOL10 HROFDY 0 0 0 0 0 0

EMISFACT VOL10 HROFDY 0 1 1 1 1 1

EMISFACT VOL10 HROFDY 1 1 1 0 0 0

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EMISFACT VOL17 HROFDY 0 0 0 0 0 0

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EMISFACT VOL18 HROFDY 0 0 0 0 0 0

EMISFACT VOL19 HROFDY 0 0 0 0 0 0

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CONCUNIT 531.5 NO2 PPM
SRCGROUP ALL
SO FINISHED
**
****
** ISCST3 Receptor Pathway
****
**
**
RE STARTING
** DESCRREC "FENCEGRD" "Receptors generated from Fenceline Grid"

DISCCART	181.20	612.75	2.00
DISCCART	156.16	587.71	2.00
DISCCART	223.43	620.03	2.00
DISCCART	247.94	620.00	2.00
DISCCART	272.46	619.96	2.00
DISCCART	296.97	619.92	2.00
DISCCART	321.49	619.89	2.00
DISCCART	346.00	619.85	2.00
DISCCART	370.52	619.81	2.00
DISCCART	395.03	619.78	2.00
DISCCART	419.55	619.74	2.00
DISCCART	444.06	619.70	2.00
DISCCART	468.58	619.67	2.00
DISCCART	493.09	619.63	2.00
DISCCART	517.61	619.59	2.00
DISCCART	542.12	619.56	2.00
DISCCART	566.64	619.52	2.00
DISCCART	591.15	619.48	2.00
DISCCART	615.67	619.45	2.00
DISCCART	640.18	619.41	2.00
DISCCART	682.80	587.07	2.00
DISCCART	690.11	544.97	2.00
DISCCART	690.11	520.52	2.00
DISCCART	690.11	496.08	2.00
DISCCART	690.11	471.64	2.00
DISCCART	690.11	447.20	2.00
DISCCART	690.11	422.75	2.00
DISCCART	690.11	398.31	2.00
DISCCART	690.11	373.87	2.00
DISCCART	690.11	349.42	2.00
DISCCART	690.11	324.98	2.00
DISCCART	690.11	300.54	2.00
DISCCART	690.11	276.10	2.00
DISCCART	690.11	251.65	2.00
DISCCART	690.11	227.21	2.00
DISCCART	690.11	202.77	2.00
DISCCART	690.11	178.33	2.00
DISCCART	690.11	153.88	2.00
DISCCART	690.11	129.44	2.00
DISCCART	657.74	86.75	2.00
DISCCART	615.56	79.48	2.00
DISCCART	591.08	79.51	2.00
DISCCART	566.60	79.55	2.00
DISCCART	542.12	79.59	2.00
DISCCART	517.64	79.62	2.00
DISCCART	493.16	79.66	2.00
DISCCART	468.68	79.70	2.00
DISCCART	444.20	79.73	2.00
DISCCART	419.73	79.77	2.00
DISCCART	395.25	79.81	2.00

DISCCART 370.77 79.84 2.00
DISCCART 346.29 79.88 2.00
DISCCART 321.81 79.92 2.00
DISCCART 297.33 79.95 2.00
DISCCART 272.85 79.99 2.00
DISCCART 248.37 80.03 2.00
DISCCART 223.89 80.06 2.00
DISCCART 199.42 80.10 2.00
DISCCART 156.81 112.39 2.00
DISCCART 149.45 154.47 2.00
DISCCART 149.42 178.91 2.00
DISCCART 149.38 203.35 2.00
DISCCART 149.35 227.80 2.00
DISCCART 149.31 252.24 2.00
DISCCART 149.27 276.68 2.00
DISCCART 149.24 301.13 2.00
DISCCART 149.20 325.57 2.00
DISCCART 149.17 350.01 2.00
DISCCART 149.13 374.45 2.00
DISCCART 149.09 398.90 2.00
DISCCART 149.06 423.34 2.00
DISCCART 149.02 447.78 2.00
DISCCART 148.98 472.23 2.00
DISCCART 148.95 496.67 2.00
DISCCART 148.91 521.11 2.00
DISCCART 148.88 545.55 2.00
RE FINISHED
**
****
** ISCST3 Meteorology Pathway
****
**
**
ME STARTING
INPUTFIL U:\UcAir\METDAT~1\Ontario\ont72.met
ANEMHGHT 10 METERS
SURFDATA 3102 1972
UAIRDATA 3102 1972
ME FINISHED
**
****
** ISCST3 Output Pathway
****
**
**
OU STARTING
RECTABLE ALLAVE 1ST
RECTABLE 1 1ST
** Auto-Generated Plotfiles
PLOTFILE 1 ALL 1ST NO2.IS\01H1GALL.PLT

OU FINISHED

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

CONC URBAN FLAT FLGPOL NOCALM

*** MODEL SETUP OPTIONS SUMMARY ***

- -

**Intermediate Terrain Processing is Selected

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

-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION. DDPLETE = F
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses User-Specified Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.

4. Not Use Calms Processing Routine.

5. Not Use Missing Data Processing Routine.

6. Default Wind Profile Exponents.

7. Default Vertical Potential Temperature Gradients.

**Model Assumes Receptors on FLAT Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

**Model Calculates 1 Short Term Average(s) of: 1-HR

**This Run Includes: 121 Source(s); 1 Source Group(s); and 76 Receptor(s)

**The Model Assumes A Pollutant Type of: NOX

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

**Output Options Selected:

Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0

Emission Units = NO2 ; Emission Rate Unit Factor = 531.50

Output Units = PPM

**Approximate Storage Requirements of Model = 1.3 MB of RAM.

**Input Runstream File: NO2.INP

**Output Print File: NO2.OUT

CONC URBAN FLAT FLGPOL NOCALM

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL5	0	0.10413E-02	220.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL6	0	0.10413E-02	260.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL7	0	0.10413E-02	300.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL8	0	0.10413E-02	340.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL9	0	0.10413E-02	380.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL10	0	0.10413E-02	420.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL17	0	0.10413E-02	220.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL18	0	0.10413E-02	260.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL19	0	0.10413E-02	300.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL20	0	0.10413E-02	340.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL21	0	0.10413E-02	380.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL22	0	0.10413E-02	420.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL27	0	0.10413E-02	220.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL28	0	0.10413E-02	260.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL29	0	0.10413E-02	300.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL30	0	0.10413E-02	340.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL31	0	0.10413E-02	380.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL32	0	0.10413E-02	420.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL39	0	0.10413E-02	220.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL40	0	0.10413E-02	260.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL41	0	0.10413E-02	300.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL42	0	0.10413E-02	340.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL43	0	0.10413E-02	380.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL44	0	0.10413E-02	420.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL50	0	0.10413E-02	220.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL51	0	0.10413E-02	260.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL52	0	0.10413E-02	300.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL53	0	0.10413E-02	340.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL54	0	0.10413E-02	380.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL55	0	0.10413E-02	420.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL61	0	0.10413E-02	220.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL62	0	0.10413E-02	260.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL63	0	0.10413E-02	300.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL64	0	0.10413E-02	340.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL65	0	0.10413E-02	380.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL66	0	0.10413E-02	420.0	229.4	0.0	5.00	9.30	2.33	HROFDY

VOL67	0	0.10413E-02	219.8	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL68	0	0.10413E-02	260.0	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL69	0	0.10413E-02	300.2	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL70	0	0.10413E-02	340.4	189.5	0.0	5.00	9.30	2.33	HROFDY

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL71	0	0.10413E-02	380.7	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL72	0	0.10413E-02	420.9	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL73	0	0.10413E-02	460.3	189.2	0.0	5.00	9.30	2.33	HROFDY
VOL74	0	0.10413E-02	459.9	229.1	0.0	5.00	9.30	2.33	HROFDY
VOL75	0	0.10413E-02	459.9	269.0	0.0	5.00	9.30	2.33	HROFDY
VOL76	0	0.10413E-02	459.9	308.9	0.0	5.00	9.30	2.33	HROFDY
VOL78	0	0.10413E-02	459.9	348.8	0.0	5.00	9.30	2.33	HROFDY
VOL79	0	0.10413E-02	459.9	388.7	0.0	5.00	9.30	2.33	HROFDY
VOL80	0	0.10413E-02	459.9	428.6	0.0	5.00	9.30	2.33	HROFDY
VOL81	0	0.10413E-02	219.8	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL82	0	0.10413E-02	259.8	149.5	0.0	5.00	9.30	2.33	HROFDY

VOL83	0	0.10413E-02	299.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL84	0	0.10413E-02	339.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL85	0	0.10413E-02	379.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL86	0	0.10413E-02	419.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL87	0	0.10413E-02	460.0	149.3	0.0	5.00	9.30	2.33	HROFDY
VOL88	0	0.10413E-02	500.2	149.3	0.0	5.00	9.30	2.33	HROFDY
VOL89	0	0.10413E-02	500.3	189.3	0.0	5.00	9.30	2.33	HROFDY
VOL90	0	0.10413E-02	499.9	229.3	0.0	5.00	9.30	2.33	HROFDY
VOL91	0	0.10413E-02	499.9	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL92	0	0.10413E-02	499.9	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL93	0	0.10413E-02	499.9	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL94	0	0.10413E-02	499.9	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL95	0	0.10413E-02	500.0	428.8	0.0	5.00	9.30	2.33	HROFDY
VOL96	0	0.10413E-02	540.0	428.8	0.0	5.00	9.30	2.33	
VOL97	0	0.10413E-02	580.0	428.8	0.0	5.00	9.30	2.33	
VOL98	0	0.10413E-02	620.0	428.8	0.0	5.00	9.30	2.33	
VOL99	0	0.10413E-02	540.0	389.4	0.0	5.00	9.30	2.33	
VOL100	0	0.10413E-02	580.0	389.4	0.0	5.00	9.30	2.33	
VOL101	0	0.10413E-02	620.0	389.4	0.0	5.00	9.30	2.33	
VOL102	0	0.10413E-02	540.0	349.4	0.0	5.00	9.30	2.33	
VOL103	0	0.10413E-02	580.0	349.4	0.0	5.00	9.30	2.33	
VOL104	0	0.10413E-02	620.0	349.4	0.0	5.00	9.30	2.33	
VOL105	0	0.10413E-02	540.0	309.4	0.0	5.00	9.30	2.33	
VOL106	0	0.10413E-02	580.0	309.4	0.0	5.00	9.30	2.33	
VOL107	0	0.10413E-02	620.0	309.4	0.0	5.00	9.30	2.33	
VOL108	0	0.10413E-02	540.0	269.4	0.0	5.00	9.30	2.33	
VOL109	0	0.10413E-02	580.0	269.4	0.0	5.00	9.30	2.33	
VOL110	0	0.10413E-02	620.0	269.4	0.0	5.00	9.30	2.33	
VOL111	0	0.10413E-02	540.0	229.3	0.0	5.00	9.30	2.33	

CONC URBAN FLAT FLGPOL NOCALM

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL112	0	0.10413E-02	580.0	229.3	0.0	5.00	9.30	2.33	
VOL113	0	0.10413E-02	620.0	229.3	0.0	5.00	9.30	2.33	
VOL114	0	0.10413E-02	540.0	189.3	0.0	5.00	9.30	2.33	
VOL115	0	0.10413E-02	580.0	189.3	0.0	5.00	9.30	2.33	
VOL116	0	0.10413E-02	620.0	189.3	0.0	5.00	9.30	2.33	
VOL117	0	0.10413E-02	540.0	149.3	0.0	5.00	9.30	2.33	
VOL118	0	0.10413E-02	580.0	149.3	0.0	5.00	9.30	2.33	
VOL119	0	0.10413E-02	620.0	149.3	0.0	5.00	9.30	2.33	
VOL120	0	0.10413E-02	220.0	470.0	0.0	5.00	9.30	2.33	
VOL121	0	0.10413E-02	220.0	510.0	0.0	5.00	9.30	2.33	
VOL122	0	0.10413E-02	220.0	550.0	0.0	5.00	9.30	2.33	
VOL123	0	0.10413E-02	260.0	470.0	0.0	5.00	9.30	2.33	
VOL124	0	0.10413E-02	300.0	470.0	0.0	5.00	9.30	2.33	
VOL125	0	0.10413E-02	340.0	470.0	0.0	5.00	9.30	2.33	
VOL126	0	0.10413E-02	380.0	470.0	0.0	5.00	9.30	2.33	
VOL127	0	0.10413E-02	420.0	470.0	0.0	5.00	9.30	2.33	
VOL128	0	0.10413E-02	460.0	470.0	0.0	5.00	9.30	2.33	
VOL129	0	0.10413E-02	500.0	470.0	0.0	5.00	9.30	2.33	
VOL130	0	0.10413E-02	540.0	470.0	0.0	5.00	9.30	2.33	
VOL131	0	0.10413E-02	580.0	470.0	0.0	5.00	9.30	2.33	
VOL132	0	0.10413E-02	620.0	470.0	0.0	5.00	9.30	2.33	
VOL133	0	0.10413E-02	260.0	510.0	0.0	5.00	9.30	2.33	
VOL134	0	0.10413E-02	300.0	510.0	0.0	5.00	9.30	2.33	
VOL135	0	0.10413E-02	340.0	510.0	0.0	5.00	9.30	2.33	
VOL136	0	0.10413E-02	380.0	510.0	0.0	5.00	9.30	2.33	
VOL137	0	0.10413E-02	420.0	510.0	0.0	5.00	9.30	2.33	
VOL138	0	0.10413E-02	460.0	510.0	0.0	5.00	9.30	2.33	
VOL139	0	0.10413E-02	500.0	510.0	0.0	5.00	9.30	2.33	
VOL140	0	0.10413E-02	540.0	510.0	0.0	5.00	9.30	2.33	
VOL141	0	0.10413E-02	580.0	510.0	0.0	5.00	9.30	2.33	
VOL142	0	0.10413E-02	620.0	510.0	0.0	5.00	9.30	2.33	
VOL143	0	0.10413E-02	260.0	550.0	0.0	5.00	9.30	2.33	
VOL144	0	0.10413E-02	300.0	550.0	0.0	5.00	9.30	2.33	
VOL145	0	0.10413E-02	340.0	550.0	0.0	5.00	9.30	2.33	
VOL146	0	0.10413E-02	380.0	550.0	0.0	5.00	9.30	2.33	
VOL147	0	0.10413E-02	420.0	550.0	0.0	5.00	9.30	2.33	
VOL148	0	0.10413E-02	460.0	550.0	0.0	5.00	9.30	2.33	
VOL149	0	0.10413E-02	500.0	550.0	0.0	5.00	9.30	2.33	
VOL150	0	0.10413E-02	540.0	550.0	0.0	5.00	9.30	2.33	
VOL151	0	0.10413E-02	580.0	550.0	0.0	5.00	9.30	2.33	

CONC URBAN FLAT FLGPOL NOCALM

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL152	0	0.10413E-02	620.0	550.0	0.0	5.00	9.30	2.33	

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

ALL VOL5 , VOL6 , VOL7 , VOL8 , VOL9 , VOL10 , VOL17 , VOL18 , VOL19 , VOL20 , VOL21 , VOL22 ,

VOL27 , VOL28 , VOL29 , VOL30 , VOL31 , VOL32 , VOL39 , VOL40 , VOL41 , VOL42 , VOL43 , VOL44 ,

VOL50 , VOL51 , VOL52 , VOL53 , VOL54 , VOL55 , VOL61 , VOL62 , VOL63 , VOL64 , VOL65 , VOL66 ,

VOL67 , VOL68 , VOL69 , VOL70 , VOL71 , VOL72 , VOL73 , VOL74 , VOL75 , VOL76 , VOL78 , VOL79 ,

VOL80 , VOL81 , VOL82 , VOL83 , VOL84 , VOL85 , VOL86 , VOL87 , VOL88 , VOL89 , VOL90 , VOL91 ,

VOL92 , VOL93 , VOL94 , VOL95 , VOL96 , VOL97 , VOL98 , VOL99 , VOL100 , VOL101 , VOL102 , VOL103 ,

VOL104 , VOL105 , VOL106 , VOL107 , VOL108 , VOL109 , VOL110 , VOL111 , VOL112 , VOL113 , VOL114 , VOL115 ,

VOL116 , VOL117 , VOL118 , VOL119 , VOL120 , VOL121 , VOL122 , VOL123 , VOL124 , VOL125 , VOL126 , VOL127 ,

VOL128 , VOL129 , VOL130 , VOL131 , VOL132 , VOL133 , VOL134 , VOL135 , VOL136 , VOL137 , VOL138 , VOL139 ,

VOL140 , VOL141 , VOL142 , VOL143 , VOL144 , VOL145 , VOL146 , VOL147 , VOL148 , VOL149 , VOL150 , VOL151 ,

VOL152 ,

* 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 = VOL5 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL6 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL7 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL8 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL9 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL18 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL19 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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

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SOURCE ID = VOL10 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL17 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

SOURCE ID = VOL20 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

*** ISCST3 - VERSION 02035 ***   *** The Avenue   ***   09/05/08

*** Construction NO2   ***   17:03:35

**MODELOPTs: PAGE 9

CONC   URBAN FLAT FLGPOL   NOCALM

* 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 = VOL21   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

SOURCE ID = VOL22   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

SOURCE ID = VOL27   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

SOURCE ID = VOL28   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

SOURCE ID = VOL29   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

*** ISCST3 - VERSION 02035 ***   *** The Avenue   ***   09/05/08

*** Construction NO2   ***   17:03:35

**MODELOPTs: PAGE 10

CONC   URBAN FLAT FLGPOL   NOCALM

* 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 = VOL30   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

SOURCE ID = VOL31   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL32 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL39 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL40 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC URBAN FLAT FLGPOL NOCALM

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

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

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SOURCE ID = VOL41 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL42 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL43 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL44 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL50 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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 = VOL51 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL52 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL53 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL54 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL55 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

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

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SOURCE ID = VOL61 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL62 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL63 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL64 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL65 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

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

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SOURCE ID = VOL66 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL67 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL68 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL69 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL70 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

CONC URBAN FLAT FLGPOL NOCALM

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

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HOUR SCALAR

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SOURCE ID = VOL71 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL72 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL73 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL74 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL75 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL79 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL80 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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

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SOURCE ID = VOL76 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL78 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

SOURCE ID = VOL81 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

*** ISCST3 - VERSION 02035 ***   *** The Avenue   ***   09/05/08

*** Construction NO2   ***   17:03:35

**MODELOPTs: PAGE 17

CONC   URBAN FLAT FLGPOL   NOCALM

* 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 = VOL82   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

SOURCE ID = VOL83   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

SOURCE ID = VOL84   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

SOURCE ID = VOL85   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

SOURCE ID = VOL86   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

*** ISCST3 - VERSION 02035 ***   *** The Avenue   ***   09/05/08

*** Construction NO2   ***   17:03:35

**MODELOPTs: PAGE 18

CONC   URBAN FLAT FLGPOL   NOCALM

* 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 = VOL87   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12
.10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18
.00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24
.00000E+00

SOURCE ID = VOL88   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL89 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL90 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL91 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC URBAN FLAT FLGPOL NOCALM

* 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 = VOL92 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL93 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL94 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL95 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC URBAN FLAT FLGPOL NOCALM

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

(181.2, 612.8, 0.0, 2.0); (156.2, 587.7, 0.0, 2.0);
(223.4, 620.0, 0.0, 2.0); (247.9, 620.0, 0.0, 2.0);
(272.5, 620.0, 0.0, 2.0); (297.0, 619.9, 0.0, 2.0);
(321.5, 619.9, 0.0, 2.0); (346.0, 619.8, 0.0, 2.0);
(370.5, 619.8, 0.0, 2.0); (395.0, 619.8, 0.0, 2.0);
(419.5, 619.7, 0.0, 2.0); (444.1, 619.7, 0.0, 2.0);
(468.6, 619.7, 0.0, 2.0); (493.1, 619.6, 0.0, 2.0);
(517.6, 619.6, 0.0, 2.0); (542.1, 619.6, 0.0, 2.0);
(566.6, 619.5, 0.0, 2.0); (591.2, 619.5, 0.0, 2.0);
(615.7, 619.5, 0.0, 2.0); (640.2, 619.4, 0.0, 2.0);
(682.8, 587.1, 0.0, 2.0); (690.1, 545.0, 0.0, 2.0);
(690.1, 520.5, 0.0, 2.0); (690.1, 496.1, 0.0, 2.0);
(690.1, 471.6, 0.0, 2.0); (690.1, 447.2, 0.0, 2.0);
(690.1, 422.8, 0.0, 2.0); (690.1, 398.3, 0.0, 2.0);
(690.1, 373.9, 0.0, 2.0); (690.1, 349.4, 0.0, 2.0);
(690.1, 325.0, 0.0, 2.0); (690.1, 300.5, 0.0, 2.0);
(690.1, 276.1, 0.0, 2.0); (690.1, 251.6, 0.0, 2.0);
(690.1, 227.2, 0.0, 2.0); (690.1, 202.8, 0.0, 2.0);
(690.1, 178.3, 0.0, 2.0); (690.1, 153.9, 0.0, 2.0);
(690.1, 129.4, 0.0, 2.0); (657.7, 86.8, 0.0, 2.0);
(615.6, 79.5, 0.0, 2.0); (591.1, 79.5, 0.0, 2.0);
(566.6, 79.6, 0.0, 2.0); (542.1, 79.6, 0.0, 2.0);
(517.6, 79.6, 0.0, 2.0); (493.2, 79.7, 0.0, 2.0);
(468.7, 79.7, 0.0, 2.0); (444.2, 79.7, 0.0, 2.0);
(419.7, 79.8, 0.0, 2.0); (395.3, 79.8, 0.0, 2.0);
(370.8, 79.8, 0.0, 2.0); (346.3, 79.9, 0.0, 2.0);
(321.8, 79.9, 0.0, 2.0); (297.3, 79.9, 0.0, 2.0);
(272.9, 80.0, 0.0, 2.0); (248.4, 80.0, 0.0, 2.0);
(223.9, 80.1, 0.0, 2.0); (199.4, 80.1, 0.0, 2.0);
(156.8, 112.4, 0.0, 2.0); (149.4, 154.5, 0.0, 2.0);
(149.4, 178.9, 0.0, 2.0); (149.4, 203.4, 0.0, 2.0);
(149.4, 227.8, 0.0, 2.0); (149.3, 252.2, 0.0, 2.0);
(149.3, 276.7, 0.0, 2.0); (149.2, 301.1, 0.0, 2.0);
(149.2, 325.6, 0.0, 2.0); (149.2, 350.0, 0.0, 2.0);
(149.1, 374.5, 0.0, 2.0); (149.1, 398.9, 0.0, 2.0);
(149.1, 423.3, 0.0, 2.0); (149.0, 447.8, 0.0, 2.0);
(149.0, 472.2, 0.0, 2.0); (148.9, 496.7, 0.0, 2.0);
(148.9, 521.1, 0.0, 2.0); (148.9, 545.5, 0.0, 2.0);

CONC URBAN FLAT FLGPOL NOCALM

*** 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

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,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
B	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
C	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00
D	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00
E	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00
F	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00

D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

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

FILE: U:\UcAir\METDAT~1\Ontario\ont72.met

FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)

SURFACE STATION NO.: 3102 UPPER AIR STATION NO.: 3102

NAME: UNKNOWN NAME: UNKNOWN

YEAR: 1972 YEAR: 1972

YR MN DY HR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
72 01 01 01	171.0	3.09	280.4	6	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 02	178.0	5.66	277.0	5	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 03	174.0	5.66	277.0	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 04	183.0	4.12	277.0	5	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 05	173.0	2.57	274.8	6	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 06	172.0	6.17	274.8	5	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 07	195.0	3.09	274.8	6	850.0	400.0	0.0000	0.0	0.0000	0	0.00
72 01 01 08	183.0	5.14	277.6	5	68.0	436.0	0.0000	0.0	0.0000	0	0.00
72 01 01 09	67.0	2.57	282.6	4	198.0	505.0	0.0000	0.0	0.0000	0	0.00
72 01 01 10	101.0	4.12	286.5	3	329.0	574.0	0.0000	0.0	0.0000	0	0.00
72 01 01 11	154.0	4.63	289.8	3	459.0	643.0	0.0000	0.0	0.0000	0	0.00
72 01 01 12	116.0	4.12	293.7	3	589.0	712.0	0.0000	0.0	0.0000	0	0.00
72 01 01 13	103.0	5.14	293.7	4	720.0	781.0	0.0000	0.0	0.0000	0	0.00
72 01 01 14	109.0	5.14	294.3	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 15	102.0	5.14	293.7	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 16	114.0	5.14	293.7	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 17	71.0	3.60	290.9	5	850.0	840.0	0.0000	0.0	0.0000	0	0.00
72 01 01 18	37.0	3.60	288.2	5	850.0	777.0	0.0000	0.0	0.0000	0	0.00
72 01 01 19	174.0	6.69	284.3	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 20	117.0	4.12	284.3	5	850.0	651.0	0.0000	0.0	0.0000	0	0.00
72 01 01 21	180.0	5.66	280.4	4	850.0	850.0	0.0000	0.0	0.0000	0	0.00
72 01 01 22	202.0	4.12	282.0	5	850.0	526.0	0.0000	0.0	0.0000	0	0.00
72 01 01 23	100.0	4.63	281.5	5	850.0	463.0	0.0000	0.0	0.0000	0	0.00
72 01 01 24	180.0	2.57	280.9	6	850.0	400.0	0.0000	0.0	0.0000	0	0.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.

FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): VOL5 , VOL6 , VOL7 , VOL8 , VOL9 , VOL10 , VOL17 ,
VOL18 , VOL19 , VOL20 , VOL21 , VOL22 , VOL27 , VOL28 , VOL29 , VOL30 , VOL31 , VOL32 , VOL39 ,
VOL40 , VOL41 , VOL42 , VOL43 , VOL44 , VOL50 , VOL51 , VOL52 , VOL53 , VOL54 , VOL55 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN PPM **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
181.20	612.75	0.00514	(72072921)	156.16	587.71	0.00602	(72081005)
223.43	620.03	0.00674	(72112508)	247.94	620.00	0.00691	(72112508)
272.46	619.96	0.00681	(72112508)	296.97	619.92	0.00687	(72112809)
321.49	619.89	0.00690	(72112508)	346.00	619.85	0.00684	(72112708)
370.52	619.81	0.00692	(72112508)	395.03	619.78	0.00683	(72112508)
419.55	619.74	0.00689	(72112708)	444.06	619.70	0.00688	(72112508)

468.58	619.67	0.00682 (72112708)	493.09	619.63	0.00685 (72112809)
517.61	619.59	0.00671 (72112708)	542.12	619.56	0.00684 (72112708)
566.64	619.52	0.00662 (72112708)	591.15	619.48	0.00638 (72112708)
615.67	619.45	0.00621 (72071223)	640.18	619.41	0.00595 (72071302)
682.80	587.07	0.00534 (72072123)	690.11	544.97	0.00620 (72102320)
690.11	520.52	0.00632 (72080824)	690.11	496.08	0.00627 (72082702)
690.11	471.64	0.00627 (72092723)	690.11	447.20	0.00614 (72081503)
690.11	422.75	0.00598 (72102618)	690.11	398.31	0.00558 (72102618)
690.11	373.87	0.00569 (72061122)	690.11	349.42	0.00557 (72102420)
690.11	324.98	0.00540 (72112118)	690.11	300.54	0.00523 (72112118)
690.11	276.10	0.00516 (72111523)	690.11	251.65	0.00509 (72111522)
690.11	227.21	0.00503 (72090323)	690.11	202.77	0.00498 (72080805)
690.11	178.33	0.00505 (72102108)	690.11	153.88	0.00531 (72102108)
690.11	129.44	0.00556 (72102108)	657.74	86.75	0.00730 (72102108)
615.56	79.48	0.00720 (72102108)	591.08	79.51	0.00714 (72102108)
566.60	79.55	0.00714 (72102108)	542.12	79.59	0.00706 (72102108)
517.64	79.62	0.00692 (72102108)	493.16	79.66	0.00687 (72101508)
468.68	79.70	0.00688 (72112308)	444.20	79.73	0.00689 (72102408)
419.73	79.77	0.00689 (72101508)	395.25	79.81	0.00694 (72111808)
370.77	79.84	0.00692 (72102408)	346.29	79.88	0.00691 (72111808)
321.81	79.92	0.00699 (72111808)	297.33	79.95	0.00690 (72111808)
272.85	79.99	0.00698 (72111808)	248.37	80.03	0.00696 (72111808)
223.89	80.06	0.00691 (72111808)	199.42	80.10	0.00693 (72111808)
156.81	112.39	0.00433 (72111808)	149.45	154.47	0.00434 (72110208)
149.42	178.91	0.00447 (72110208)	149.38	203.35	0.00440 (72110208)
149.35	227.80	0.00443 (72110208)	149.31	252.24	0.00446 (72110208)
149.27	276.68	0.00438 (72110208)	149.24	301.13	0.00447 (72110208)
149.20	325.57	0.00441 (72110208)	149.17	350.01	0.00440 (72110208)
149.13	374.45	0.00444 (72110208)	149.09	398.90	0.00432 (72110208)
149.06	423.34	0.00480 (72031206)	149.02	447.78	0.00583 (72101407)
148.98	472.23	0.00624 (72102001)	148.95	496.67	0.00637 (72100305)
148.91	521.11	0.00649 (72012605)	148.88	545.55	0.00641 (72011802)

CONC URBAN FLAT FLGPOL NOCALM

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF NOX IN PPM **

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

ALL HIGH 1ST HIGH VALUE IS 0.00730 ON 72102108: AT (657.74, 86.75, 0.00, 2.00) DC NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

CONC URBAN FLAT FLGPOL NOCALM

*** Message Summary : ISCST3 Model Execution ***

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

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 812 Informational Message(s)

A Total of 812 Calm Hours Identified

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

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

****

*** ISCST3 Finishes Successfully ***

****

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**
****************************************
**
** ISCST3 Input Produced by:
** ISC-AERMOD View Ver. 5.9.0
** Lakes Environmental Software Inc.
** Date: 9/5/2008
** File: C:\Documents and Settings\staff\Desktop\2719 Cons LST\PM10Exh.INP
**
****************************************
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****************************************
** ISCST3 Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE The Avenue
   TITLETWO Construction PM10 Exhaust
   MODELOPT CONC  URBAN NOCALM
   AVERTIME 24
   POLLUTID FUG
   TERRHGTS FLAT
   FLAGPOLE 2.00
   RUNORNOT RUN
CO FINISHED
**
****************************************
** ISCST3 Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION VOL5 VOLUME 220.000 429.400
   LOCATION VOL6 VOLUME 260.000 429.400
   LOCATION VOL7 VOLUME 300.000 429.400
   LOCATION VOL8 VOLUME 340.000 429.400
   LOCATION VOL9 VOLUME 380.000 429.400
   LOCATION VOL10 VOLUME 420.000 429.400
   LOCATION VOL17 VOLUME 220.000 389.400
   LOCATION VOL18 VOLUME 260.000 389.400
   LOCATION VOL19 VOLUME 300.000 389.400
   LOCATION VOL20 VOLUME 340.000 389.400
   LOCATION VOL21 VOLUME 380.000 389.400
   LOCATION VOL22 VOLUME 420.000 389.400
   LOCATION VOL27 VOLUME 220.000 349.400
   LOCATION VOL28 VOLUME 260.000 349.400
   LOCATION VOL29 VOLUME 300.000 349.400
   LOCATION VOL30 VOLUME 340.000 349.400
   LOCATION VOL31 VOLUME 380.000 349.400
   LOCATION VOL32 VOLUME 420.000 349.400
   LOCATION VOL39 VOLUME 220.000 309.400
   LOCATION VOL40 VOLUME 260.000 309.400
   LOCATION VOL41 VOLUME 300.000 309.400
   LOCATION VOL42 VOLUME 340.000 309.400
   LOCATION VOL43 VOLUME 380.000 309.400
   LOCATION VOL44 VOLUME 420.000 309.400
   LOCATION VOL50 VOLUME 220.000 269.400
   LOCATION VOL51 VOLUME 260.000 269.400
   LOCATION VOL52 VOLUME 300.000 269.400
   LOCATION VOL53 VOLUME 340.000 269.400
   LOCATION VOL54 VOLUME 380.000 269.400
   LOCATION VOL55 VOLUME 420.000 269.400
   LOCATION VOL61 VOLUME 220.000 229.400
   LOCATION VOL62 VOLUME 260.000 229.400
   LOCATION VOL63 VOLUME 300.000 229.400
   LOCATION VOL64 VOLUME 340.000 229.400
   LOCATION VOL65 VOLUME 380.000 229.400
   LOCATION VOL66 VOLUME 420.000 229.400
   LOCATION VOL67 VOLUME 219.790 189.500
   LOCATION VOL68 VOLUME 260.010 189.500
   LOCATION VOL69 VOLUME 300.220 189.500
   LOCATION VOL70 VOLUME 340.440 189.500
   LOCATION VOL71 VOLUME 380.660 189.500
   LOCATION VOL72 VOLUME 420.880 189.500
   LOCATION VOL73 VOLUME 460.320 189.190
   LOCATION VOL74 VOLUME 459.890 229.090
   LOCATION VOL75 VOLUME 459.890 268.990
   LOCATION VOL76 VOLUME 459.890 308.890
   LOCATION VOL78 VOLUME 459.890 348.790
   LOCATION VOL79 VOLUME 459.900 388.690
   LOCATION VOL80 VOLUME 459.890 428.590
   LOCATION VOL81 VOLUME 219.790 149.480
   LOCATION VOL82 VOLUME 259.820 149.480
   LOCATION VOL83 VOLUME 299.850 149.480
   LOCATION VOL84 VOLUME 339.880 149.480
   LOCATION VOL85 VOLUME 379.910 149.480
   LOCATION VOL86 VOLUME 419.940 149.480
   LOCATION VOL87 VOLUME 459.970 149.260
   LOCATION VOL88 VOLUME 500.220 149.260
   LOCATION VOL89 VOLUME 500.330 189.290
   LOCATION VOL90 VOLUME 499.880 229.320
   LOCATION VOL91 VOLUME 499.880 269.350
   LOCATION VOL92 VOLUME 499.870 309.380
   LOCATION VOL93 VOLUME 499.870 349.400
   LOCATION VOL94 VOLUME 499.870 389.430
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LOCATION VOL95 VOLUME 499.980 428.780

LOCATION VOL96 VOLUME 540.000 428.780

LOCATION VOL97 VOLUME 580.000 428.780

LOCATION VOL98 VOLUME 620.000 428.780

LOCATION VOL99 VOLUME 540.000 389.430

LOCATION VOL100 VOLUME 580.000 389.430

LOCATION VOL101 VOLUME 620.000 389.430

LOCATION VOL102 VOLUME 540.000 349.400

LOCATION VOL103 VOLUME 580.000 349.400

LOCATION VOL104 VOLUME 620.000 349.400

LOCATION VOL105 VOLUME 540.000 309.380

LOCATION VOL106 VOLUME 580.000 309.380

LOCATION VOL107 VOLUME 620.000 309.380

LOCATION VOL108 VOLUME 540.000 269.350

LOCATION VOL109 VOLUME 580.000 269.350

LOCATION VOL110 VOLUME 620.000 269.350

LOCATION VOL111 VOLUME 540.000 229.320

LOCATION VOL112 VOLUME 580.000 229.320

LOCATION VOL113 VOLUME 620.000 229.320

LOCATION VOL114 VOLUME 540.000 189.290

LOCATION VOL115 VOLUME 580.000 189.290

LOCATION VOL116 VOLUME 620.000 189.290

LOCATION VOL117 VOLUME 540.000 149.260

LOCATION VOL118 VOLUME 580.000 149.260

LOCATION VOL119 VOLUME 620.000 149.260

LOCATION VOL120 VOLUME 220.000 470.000

LOCATION VOL121 VOLUME 220.000 510.000

LOCATION VOL122 VOLUME 220.000 550.000

LOCATION VOL123 VOLUME 260.000 470.000

LOCATION VOL124 VOLUME 300.000 470.000

LOCATION VOL125 VOLUME 340.000 470.000

LOCATION VOL126 VOLUME 380.000 470.000

LOCATION VOL127 VOLUME 420.000 470.000

LOCATION VOL128 VOLUME 460.000 470.000

LOCATION VOL129 VOLUME 500.000 470.000

LOCATION VOL130 VOLUME 540.000 470.000

LOCATION VOL131 VOLUME 580.000 470.000

LOCATION VOL132 VOLUME 620.000 470.000

LOCATION VOL133 VOLUME 260.000 510.000

LOCATION VOL134 VOLUME 300.000 510.000

LOCATION VOL135 VOLUME 340.000 510.000

LOCATION VOL136 VOLUME 380.000 510.000

LOCATION VOL137 VOLUME 420.000 510.000

LOCATION VOL138 VOLUME 460.000 510.000

LOCATION VOL139 VOLUME 500.000 510.000

LOCATION VOL140 VOLUME 540.000 510.000

LOCATION VOL141 VOLUME 580.000 510.000

LOCATION VOL142 VOLUME 620.000 510.000

LOCATION VOL143 VOLUME 260.000 550.000

LOCATION VOL144 VOLUME 300.000 550.000

LOCATION VOL145 VOLUME 340.000 550.000

LOCATION VOL146 VOLUME 380.000 550.000

LOCATION VOL147 VOLUME 420.000 550.000

LOCATION VOL148 VOLUME 460.000 550.000

LOCATION VOL149 VOLUME 500.000 550.000

LOCATION VOL150 VOLUME 540.000 550.000

LOCATION VOL151 VOLUME 580.000 550.000

LOCATION VOL152 VOLUME 620.000 550.000

** Source Parameters **

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SRCPARAM VOL152 0.00104129688406333 5.000 9.302 2.330

** Variable Emissions Type: "By Hour-of-Day"

** Variable Emission Scenario: "Scenario 1"

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EMISFACT VOL5 HROFDY 1 1 1 0 0 0

EMISFACT VOL5 HROFDY 0 0 0 0 0 0

EMISFACT VOL6 HROFDY 0 0 0 0 0 0

EMISFACT VOL6 HROFDY 0 1 1 1 1 1

EMISFACT VOL6 HROFDY 1 1 1 0 0 0

EMISFACT VOL6 HROFDY 0 0 0 0 0 0

EMISFACT VOL7 HROFDY 0 0 0 0 0 0

EMISFACT VOL7 HROFDY 0 1 1 1 1 1

EMISFACT VOL7 HROFDY 1 1 1 0 0 0

EMISFACT VOL7 HROFDY 0 0 0 0 0 0

EMISFACT VOL8 HROFDY 0 0 0 0 0 0

EMISFACT VOL8 HROFDY 0 1 1 1 1 1

EMISFACT VOL8 HROFDY 1 1 1 0 0 0

EMISFACT VOL8 HROFDY 0 0 0 0 0 0

EMISFACT VOL9 HROFDY 0 0 0 0 0 0

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EMISFACT VOL86 HROFDY 0 0 0 0 0 0

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 EMISFACT VOL95 HROFDY 1 1 1 0 0 0
 EMISFACT VOL95 HROFDY 0 0 0 0 0 0
 SRCGROUP ALL
SO FINISHED
**
****************************************
** ISCST3 Receptor Pathway
****************************************
**
**
RE STARTING
** DESCRREC "FENCEGRD" "Receptors generated from Fenceline Grid"
 DISCCART     181.20    612.75   2.00
 DISCCART     156.16    587.71   2.00
 DISCCART     223.43    620.03   2.00
 DISCCART     247.94    620.00   2.00
 DISCCART     272.46    619.96   2.00
 DISCCART     296.97    619.92   2.00
 DISCCART     321.49    619.89   2.00
 DISCCART     346.00    619.85   2.00
 DISCCART     370.52    619.81   2.00
 DISCCART     395.03    619.78   2.00
 DISCCART     419.55    619.74   2.00
 DISCCART     444.06    619.70   2.00
 DISCCART     468.58    619.67   2.00
 DISCCART     493.09    619.63   2.00
 DISCCART     517.61    619.59   2.00
 DISCCART     542.12    619.56   2.00
 DISCCART     566.64    619.52   2.00
 DISCCART     591.15    619.48   2.00
 DISCCART     615.67    619.45   2.00
 DISCCART     640.18    619.41   2.00
 DISCCART     682.80    587.07   2.00
 DISCCART     690.11    544.97   2.00
 DISCCART     690.11    520.52   2.00
 DISCCART     690.11    496.08   2.00
 DISCCART     690.11    471.64   2.00
 DISCCART     690.11    447.20   2.00
 DISCCART     690.11    422.75   2.00
 DISCCART     690.11    398.31   2.00
 DISCCART     690.11    373.87   2.00
 DISCCART     690.11    349.42   2.00
 DISCCART     690.11    324.98   2.00
 DISCCART     690.11    300.54   2.00
 DISCCART     690.11    276.10   2.00
 DISCCART     690.11    251.65   2.00
 DISCCART     690.11    227.21   2.00
 DISCCART     690.11    202.77   2.00
 DISCCART     690.11    178.33   2.00
 DISCCART     690.11    153.88   2.00
 DISCCART     690.11    129.44   2.00
 DISCCART     657.74     86.75   2.00
 DISCCART     615.56     79.48   2.00
 DISCCART     591.08     79.51   2.00
 DISCCART     566.60     79.55   2.00
 DISCCART     542.12     79.59   2.00
 DISCCART     517.64     79.62   2.00
 DISCCART     493.16     79.66   2.00
 DISCCART     468.68     79.70   2.00
 DISCCART     444.20     79.73   2.00
 DISCCART     419.73     79.77   2.00
 DISCCART     395.25     79.81   2.00
 DISCCART     370.77     79.84   2.00
```

DISCCART	346.29	79.88	2.00
DISCCART	321.81	79.92	2.00
DISCCART	297.33	79.95	2.00
DISCCART	272.85	79.99	2.00
DISCCART	248.37	80.03	2.00
DISCCART	223.89	80.06	2.00
DISCCART	199.42	80.10	2.00
DISCCART	156.81	112.39	2.00
DISCCART	149.45	154.47	2.00
DISCCART	149.42	178.91	2.00
DISCCART	149.38	203.35	2.00
DISCCART	149.35	227.80	2.00
DISCCART	149.31	252.24	2.00
DISCCART	149.27	276.68	2.00
DISCCART	149.24	301.13	2.00
DISCCART	149.20	325.57	2.00
DISCCART	149.17	350.01	2.00
DISCCART	149.13	374.45	2.00
DISCCART	149.09	398.90	2.00
DISCCART	149.06	423.34	2.00
DISCCART	149.02	447.78	2.00
DISCCART	148.98	472.23	2.00
DISCCART	148.95	496.67	2.00
DISCCART	148.91	521.11	2.00
DISCCART	148.88	545.55	2.00

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

```
RE FINISHED
**
****************************************
** ISCST3 Meteorology Pathway
****************************************
**
**
ME STARTING
  INPUTFIL U:\UcAir\METDAT~1\Ontario\ont72.met
  ANEMHGHT 10 METERS
  SURFDATA 3102 1972
  UAIRDATA 3102 1972
ME FINISHED
**
****************************************
** ISCST3 Output Pathway
****************************************
**
**
OU STARTING
  RECTABLE ALLAVE 1ST
  RECTABLE 24 1ST
** Auto-Generated Plotfiles
  PLOTFILE 24 ALL 1ST PM10EXH.IS\24H1GALL.PLT
OU FINISHED
```

```
 *** ISCST3 - VERSION 02035 ***    *** The Avenue                    ***      09/05/08
                  *** Construction PM10 Exhaust                  ***      17:04:45
**MODELOPTs:                                                     PAGE  1
CONC              URBAN FLAT  FLGPOL              NOCALM

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

**Intermediate Terrain Processing is Selected

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

  --  SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION.  DDPLETE =  F
**Model Uses NO WET DEPLETION.  WDPLETE =  F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses User-Specified Options:
        1. Final Plume Rise.
        2. Stack-tip Downwash.
        3. Buoyancy-induced Dispersion.
```

4. Not Use Calms Processing Routine.

5. Not Use Missing Data Processing Routine.

6. Default Wind Profile Exponents.

7. Default Vertical Potential Temperature Gradients.

**Model Assumes Receptors on FLAT Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

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

**This Run Includes: 121 Source(s); 1 Source Group(s); and 76 Receptor(s)

**The Model Assumes A Pollutant Type of: FUG

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

**Output Options Selected:

Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; 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 = 1.3 MB of RAM.

**Input Runstream File: PM10Exh.INP

**Output Print File: PM10Exh.OUT

CONC URBAN FLAT FLGPOL NOCALM

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL5	0	0.10413E-02	220.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL6	0	0.10413E-02	260.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL7	0	0.10413E-02	300.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL8	0	0.10413E-02	340.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL9	0	0.10413E-02	380.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL10	0	0.10413E-02	420.0	429.4	0.0	5.00	9.30	2.33	HROFDY
VOL17	0	0.10413E-02	220.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL18	0	0.10413E-02	260.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL19	0	0.10413E-02	300.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL20	0	0.10413E-02	340.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL21	0	0.10413E-02	380.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL22	0	0.10413E-02	420.0	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL27	0	0.10413E-02	220.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL28	0	0.10413E-02	260.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL29	0	0.10413E-02	300.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL30	0	0.10413E-02	340.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL31	0	0.10413E-02	380.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL32	0	0.10413E-02	420.0	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL39	0	0.10413E-02	220.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL40	0	0.10413E-02	260.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL41	0	0.10413E-02	300.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL42	0	0.10413E-02	340.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL43	0	0.10413E-02	380.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL44	0	0.10413E-02	420.0	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL50	0	0.10413E-02	220.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL51	0	0.10413E-02	260.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL52	0	0.10413E-02	300.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL53	0	0.10413E-02	340.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL54	0	0.10413E-02	380.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL55	0	0.10413E-02	420.0	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL61	0	0.10413E-02	220.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL62	0	0.10413E-02	260.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL63	0	0.10413E-02	300.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL64	0	0.10413E-02	340.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL65	0	0.10413E-02	380.0	229.4	0.0	5.00	9.30	2.33	HROFDY
VOL66	0	0.10413E-02	420.0	229.4	0.0	5.00	9.30	2.33	HROFDY

VOL67	0	0.10413E-02	219.8	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL68	0	0.10413E-02	260.0	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL69	0	0.10413E-02	300.2	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL70	0	0.10413E-02	340.4	189.5	0.0	5.00	9.30	2.33	HROFDY

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL71	0	0.10413E-02	380.7	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL72	0	0.10413E-02	420.9	189.5	0.0	5.00	9.30	2.33	HROFDY
VOL73	0	0.10413E-02	460.3	189.2	0.0	5.00	9.30	2.33	HROFDY
VOL74	0	0.10413E-02	459.9	229.1	0.0	5.00	9.30	2.33	HROFDY
VOL75	0	0.10413E-02	459.9	269.0	0.0	5.00	9.30	2.33	HROFDY
VOL76	0	0.10413E-02	459.9	308.9	0.0	5.00	9.30	2.33	HROFDY
VOL78	0	0.10413E-02	459.9	348.8	0.0	5.00	9.30	2.33	HROFDY
VOL79	0	0.10413E-02	459.9	388.7	0.0	5.00	9.30	2.33	HROFDY
VOL80	0	0.10413E-02	459.9	428.6	0.0	5.00	9.30	2.33	HROFDY
VOL81	0	0.10413E-02	219.8	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL82	0	0.10413E-02	259.8	149.5	0.0	5.00	9.30	2.33	HROFDY

VOL83	0	0.10413E-02	299.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL84	0	0.10413E-02	339.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL85	0	0.10413E-02	379.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL86	0	0.10413E-02	419.9	149.5	0.0	5.00	9.30	2.33	HROFDY
VOL87	0	0.10413E-02	460.0	149.3	0.0	5.00	9.30	2.33	HROFDY
VOL88	0	0.10413E-02	500.2	149.3	0.0	5.00	9.30	2.33	HROFDY
VOL89	0	0.10413E-02	500.3	189.3	0.0	5.00	9.30	2.33	HROFDY
VOL90	0	0.10413E-02	499.9	229.3	0.0	5.00	9.30	2.33	HROFDY
VOL91	0	0.10413E-02	499.9	269.4	0.0	5.00	9.30	2.33	HROFDY
VOL92	0	0.10413E-02	499.9	309.4	0.0	5.00	9.30	2.33	HROFDY
VOL93	0	0.10413E-02	499.9	349.4	0.0	5.00	9.30	2.33	HROFDY
VOL94	0	0.10413E-02	499.9	389.4	0.0	5.00	9.30	2.33	HROFDY
VOL95	0	0.10413E-02	500.0	428.8	0.0	5.00	9.30	2.33	HROFDY
VOL96	0	0.10413E-02	540.0	428.8	0.0	5.00	9.30	2.33	
VOL97	0	0.10413E-02	580.0	428.8	0.0	5.00	9.30	2.33	
VOL98	0	0.10413E-02	620.0	428.8	0.0	5.00	9.30	2.33	
VOL99	0	0.10413E-02	540.0	389.4	0.0	5.00	9.30	2.33	
VOL100	0	0.10413E-02	580.0	389.4	0.0	5.00	9.30	2.33	
VOL101	0	0.10413E-02	620.0	389.4	0.0	5.00	9.30	2.33	
VOL102	0	0.10413E-02	540.0	349.4	0.0	5.00	9.30	2.33	
VOL103	0	0.10413E-02	580.0	349.4	0.0	5.00	9.30	2.33	
VOL104	0	0.10413E-02	620.0	349.4	0.0	5.00	9.30	2.33	
VOL105	0	0.10413E-02	540.0	309.4	0.0	5.00	9.30	2.33	
VOL106	0	0.10413E-02	580.0	309.4	0.0	5.00	9.30	2.33	
VOL107	0	0.10413E-02	620.0	309.4	0.0	5.00	9.30	2.33	

VOL108	0	0.10413E-02	540.0	269.4	0.0	5.00	9.30	2.33
VOL109	0	0.10413E-02	580.0	269.4	0.0	5.00	9.30	2.33
VOL110	0	0.10413E-02	620.0	269.4	0.0	5.00	9.30	2.33
VOL111	0	0.10413E-02	540.0	229.3	0.0	5.00	9.30	2.33

*** ISCST3 - VERSION 02035 ***   *** The Avenue   ***   09/05/08

*** Construction PM10 Exhaust   ***   17:04:45

**MODELOPTs: PAGE 4

CONC   URBAN FLAT FLGPOL   NOCALM

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL112	0	0.10413E-02	580.0	229.3	0.0	5.00	9.30	2.33	
VOL113	0	0.10413E-02	620.0	229.3	0.0	5.00	9.30	2.33	
VOL114	0	0.10413E-02	540.0	189.3	0.0	5.00	9.30	2.33	
VOL115	0	0.10413E-02	580.0	189.3	0.0	5.00	9.30	2.33	
VOL116	0	0.10413E-02	620.0	189.3	0.0	5.00	9.30	2.33	
VOL117	0	0.10413E-02	540.0	149.3	0.0	5.00	9.30	2.33	
VOL118	0	0.10413E-02	580.0	149.3	0.0	5.00	9.30	2.33	
VOL119	0	0.10413E-02	620.0	149.3	0.0	5.00	9.30	2.33	
VOL120	0	0.10413E-02	220.0	470.0	0.0	5.00	9.30	2.33	
VOL121	0	0.10413E-02	220.0	510.0	0.0	5.00	9.30	2.33	
VOL122	0	0.10413E-02	220.0	550.0	0.0	5.00	9.30	2.33	
VOL123	0	0.10413E-02	260.0	470.0	0.0	5.00	9.30	2.33	
VOL124	0	0.10413E-02	300.0	470.0	0.0	5.00	9.30	2.33	
VOL125	0	0.10413E-02	340.0	470.0	0.0	5.00	9.30	2.33	
VOL126	0	0.10413E-02	380.0	470.0	0.0	5.00	9.30	2.33	
VOL127	0	0.10413E-02	420.0	470.0	0.0	5.00	9.30	2.33	
VOL128	0	0.10413E-02	460.0	470.0	0.0	5.00	9.30	2.33	
VOL129	0	0.10413E-02	500.0	470.0	0.0	5.00	9.30	2.33	
VOL130	0	0.10413E-02	540.0	470.0	0.0	5.00	9.30	2.33	
VOL131	0	0.10413E-02	580.0	470.0	0.0	5.00	9.30	2.33	
VOL132	0	0.10413E-02	620.0	470.0	0.0	5.00	9.30	2.33	
VOL133	0	0.10413E-02	260.0	510.0	0.0	5.00	9.30	2.33	
VOL134	0	0.10413E-02	300.0	510.0	0.0	5.00	9.30	2.33	
VOL135	0	0.10413E-02	340.0	510.0	0.0	5.00	9.30	2.33	
VOL136	0	0.10413E-02	380.0	510.0	0.0	5.00	9.30	2.33	
VOL137	0	0.10413E-02	420.0	510.0	0.0	5.00	9.30	2.33	
VOL138	0	0.10413E-02	460.0	510.0	0.0	5.00	9.30	2.33	
VOL139	0	0.10413E-02	500.0	510.0	0.0	5.00	9.30	2.33	
VOL140	0	0.10413E-02	540.0	510.0	0.0	5.00	9.30	2.33	
VOL141	0	0.10413E-02	580.0	510.0	0.0	5.00	9.30	2.33	
VOL142	0	0.10413E-02	620.0	510.0	0.0	5.00	9.30	2.33	
VOL143	0	0.10413E-02	260.0	550.0	0.0	5.00	9.30	2.33	
VOL144	0	0.10413E-02	300.0	550.0	0.0	5.00	9.30	2.33	
VOL145	0	0.10413E-02	340.0	550.0	0.0	5.00	9.30	2.33	
VOL146	0	0.10413E-02	380.0	550.0	0.0	5.00	9.30	2.33	
VOL147	0	0.10413E-02	420.0	550.0	0.0	5.00	9.30	2.33	
VOL148	0	0.10413E-02	460.0	550.0	0.0	5.00	9.30	2.33	
VOL149	0	0.10413E-02	500.0	550.0	0.0	5.00	9.30	2.33	
VOL150	0	0.10413E-02	540.0	550.0	0.0	5.00	9.30	2.33	
VOL151	0	0.10413E-02	580.0	550.0	0.0	5.00	9.30	2.33	

*** ISCST3 - VERSION 02035 ***   *** The Avenue   ***   09/05/08

*** Construction PM10 Exhaust   ***   17:04:45

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CONC   URBAN FLAT FLGPOL   NOCALM

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
VOL152	0	0.10413E-02	620.0	550.0	0.0	5.00	9.30	2.33	

CONC URBAN FLAT FLGPOL NOCALM

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

ALL VOL5 , VOL6 , VOL7 , VOL8 , VOL9 , VOL10 , VOL17 , VOL18 , VOL19 , VOL20 , VOL21 , VOL22 ,

VOL27 , VOL28 , VOL29 , VOL30 , VOL31 , VOL32 , VOL39 , VOL40 , VOL41 , VOL42 , VOL43 , VOL44 ,

VOL50 , VOL51 , VOL52 , VOL53 , VOL54 , VOL55 , VOL61 , VOL62 , VOL63 , VOL64 , VOL65 , VOL66 ,

VOL67 , VOL68 , VOL69 , VOL70 , VOL71 , VOL72 , VOL73 , VOL74 , VOL75 , VOL76 , VOL78 , VOL79 ,

VOL80 , VOL81 , VOL82 , VOL83 , VOL84 , VOL85 , VOL86 , VOL87 , VOL88 , VOL89 , VOL90 , VOL91 ,

VOL92 , VOL93 , VOL94 , VOL95 , VOL96 , VOL97 , VOL98 , VOL99 , VOL100 , VOL101 , VOL102 , VOL103 ,

VOL104 , VOL105 , VOL106 , VOL107 , VOL108 , VOL109 , VOL110 , VOL111 , VOL112 , VOL113 , VOL114 , VOL115 ,

VOL116 , VOL117 , VOL118 , VOL119 , VOL120 , VOL121 , VOL122 , VOL123 , VOL124 , VOL125 , VOL126 , VOL127 ,

VOL128 , VOL129 , VOL130 , VOL131 , VOL132 , VOL133 , VOL134 , VOL135 , VOL136 , VOL137 , VOL138 , VOL139 ,

VOL140 , VOL141 , VOL142 , VOL143 , VOL144 , VOL145 , VOL146 , VOL147 , VOL148 , VOL149 , VOL150 , VOL151 ,

VOL152 ,

CONC URBAN FLAT FLGPOL NOCALM

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

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

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SOURCE ID = VOL5 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL6 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL7 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL8 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL9 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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 = VOL10 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL17 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL18 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL19 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL20 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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

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SOURCE ID = VOL21   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL22   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL27   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL28   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL29   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+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 = VOL30   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL31   ; SOURCE TYPE = VOLUME   :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL32 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL39 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL40 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC URBAN FLAT FLGPOL NOCALM

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

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

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SOURCE ID = VOL41 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL42 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL43 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL44 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL50 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL53 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL54 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC URBAN FLAT FLGPOL NOCALM

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

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

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SOURCE ID = VOL51 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL52 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

SOURCE ID = VOL55 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC   URBAN FLAT FLGPOL   NOCALM

* 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 = VOL61   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL62   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL63   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL64   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL65   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

CONC   URBAN FLAT FLGPOL   NOCALM

* 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 = VOL66   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00   8 .10000E+01   9 .10000E+01   10 .10000E+01   11 .10000E+01   12 .10000E+01

13 .10000E+01   14 .10000E+01   15 .10000E+01   16 .00000E+00   17 .00000E+00   18 .00000E+00

19 .00000E+00   20 .00000E+00   21 .00000E+00   22 .00000E+00   23 .00000E+00   24 .00000E+00

SOURCE ID = VOL67   ; SOURCE TYPE = VOLUME :

1 .00000E+00   2 .00000E+00   3 .00000E+00   4 .00000E+00   5 .00000E+00   6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL68 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL69 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL70 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

CONC URBAN FLAT FLGPOL NOCALM

* 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 = VOL71 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL72 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL73 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL74 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

SOURCE ID = VOL75 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL79 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL80 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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

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SOURCE ID = VOL76 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL78 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

SOURCE ID = VOL81 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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

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SOURCE ID = VOL82 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL83 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL84 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL85 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL86 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+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

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SOURCE ID = VOL87 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL88 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL89 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL90 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL91 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

CONC URBAN FLAT FLGPOL NOCALM

* 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 = VOL92 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL93 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL94 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

SOURCE ID = VOL95 ; SOURCE TYPE = VOLUME :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6 .00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12 .10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18 .00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24 .00000E+00

*** DISCRETE CARTESIAN RECEPTORS ***

(X-COORD, Y-COORD, ZELEV, ZFLAG)

(METERS)

(181.2, 612.8, 0.0, 2.0); (156.2, 587.7, 0.0, 2.0);
(223.4, 620.0, 0.0, 2.0); (247.9, 620.0, 0.0, 2.0);
(272.5, 620.0, 0.0, 2.0); (297.0, 619.9, 0.0, 2.0);
(321.5, 619.9, 0.0, 2.0); (346.0, 619.8, 0.0, 2.0);
(370.5, 619.8, 0.0, 2.0); (395.0, 619.8, 0.0, 2.0);
(419.5, 619.7, 0.0, 2.0); (444.1, 619.7, 0.0, 2.0);
(468.6, 619.7, 0.0, 2.0); (493.1, 619.6, 0.0, 2.0);
(517.6, 619.6, 0.0, 2.0); (542.1, 619.6, 0.0, 2.0);
(566.6, 619.5, 0.0, 2.0); (591.2, 619.5, 0.0, 2.0);
(615.7, 619.5, 0.0, 2.0); (640.2, 619.4, 0.0, 2.0);
(682.8, 587.1, 0.0, 2.0); (690.1, 545.0, 0.0, 2.0);
(690.1, 520.5, 0.0, 2.0); (690.1, 496.1, 0.0, 2.0);
(690.1, 471.6, 0.0, 2.0); (690.1, 447.2, 0.0, 2.0);
(690.1, 422.8, 0.0, 2.0); (690.1, 398.3, 0.0, 2.0);
(690.1, 373.9, 0.0, 2.0); (690.1, 349.4, 0.0, 2.0);
(690.1, 325.0, 0.0, 2.0); (690.1, 300.5, 0.0, 2.0);
(690.1, 276.1, 0.0, 2.0); (690.1, 251.6, 0.0, 2.0);
(690.1, 227.2, 0.0, 2.0); (690.1, 202.8, 0.0, 2.0);
(690.1, 178.3, 0.0, 2.0); (690.1, 153.9, 0.0, 2.0);
(690.1, 129.4, 0.0, 2.0); (657.7, 86.8, 0.0, 2.0);
(615.6, 79.5, 0.0, 2.0); (591.1, 79.5, 0.0, 2.0);
(566.6, 79.6, 0.0, 2.0); (542.1, 79.6, 0.0, 2.0);
(517.6, 79.6, 0.0, 2.0); (493.2, 79.7, 0.0, 2.0);
(468.7, 79.7, 0.0, 2.0); (444.2, 79.7, 0.0, 2.0);
(419.7, 79.8, 0.0, 2.0); (395.3, 79.8, 0.0, 2.0);
(370.8, 79.8, 0.0, 2.0); (346.3, 79.9, 0.0, 2.0);
(321.8, 79.9, 0.0, 2.0); (297.3, 79.9, 0.0, 2.0);
(272.9, 80.0, 0.0, 2.0); (248.4, 80.0, 0.0, 2.0);
(223.9, 80.1, 0.0, 2.0); (199.4, 80.1, 0.0, 2.0);
(156.8, 112.4, 0.0, 2.0); (149.4, 154.5, 0.0, 2.0);
(149.4, 178.9, 0.0, 2.0); (149.4, 203.4, 0.0, 2.0);
(149.4, 227.8, 0.0, 2.0); (149.3, 252.2, 0.0, 2.0);
(149.3, 276.7, 0.0, 2.0); (149.2, 301.1, 0.0, 2.0);
(149.2, 325.6, 0.0, 2.0); (149.2, 350.0, 0.0, 2.0);
(149.1, 374.5, 0.0, 2.0); (149.1, 398.9, 0.0, 2.0);
(149.1, 423.3, 0.0, 2.0); (149.0, 447.8, 0.0, 2.0);
(149.0, 472.2, 0.0, 2.0); (148.9, 496.7, 0.0, 2.0);
(148.9, 521.1, 0.0, 2.0); (148.9, 545.5, 0.0, 2.0);

*** 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

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,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
B	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
C	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00
D	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00
E	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00
F	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***

(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00

D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

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

FILE: U:\UcAir\METDAT~1\Ontario\ont72.met

FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)

SURFACE STATION NO.: 3102 UPPER AIR STATION NO.: 3102

NAME: UNKNOWN NAME: UNKNOWN

YEAR: 1972 YEAR: 1972

FLOW SPEED TEMP STAB MIXING HEIGHT (M) USTAR M-O LENGTH Z-0 IPCODE PRATE

YR MN DY HR VECTOR (M/S) (K) CLASS RURAL URBAN (M/S) (M) (M) (mm/HR)

- -

72 01 01 01 171.0 3.09 280.4 6 850.0 400.0 0.0000 0.0 0.0000 0 0.00

72 01 01 02 178.0 5.66 277.0 5 850.0 400.0 0.0000 0.0 0.0000 0 0.00

72 01 01 03 174.0 5.66 277.0 4 850.0 850.0 0.0000 0.0 0.0000 0 0.00

72 01 01 04 183.0 4.12 277.0 5 850.0 400.0 0.0000 0.0 0.0000 0 0.00

72 01 01 05 173.0 2.57 274.8 6 850.0 400.0 0.0000 0.0 0.0000 0 0.00

72 01 01 06 172.0 6.17 274.8 5 850.0 400.0 0.0000 0.0 0.0000 0 0.00

72 01 01 07 195.0 3.09 274.8 6 850.0 400.0 0.0000 0.0 0.0000 0 0.00

72 01 01 08 183.0 5.14 277.6 5 68.0 436.0 0.0000 0.0 0.0000 0 0.00

72 01 01 09 67.0 2.57 282.6 4 198.0 505.0 0.0000 0.0 0.0000 0 0.00

72 01 01 10 101.0 4.12 286.5 3 329.0 574.0 0.0000 0.0 0.0000 0 0.00

72 01 01 11 154.0 4.63 289.8 3 459.0 643.0 0.0000 0.0 0.0000 0 0.00

72 01 01 12 116.0 4.12 293.7 3 589.0 712.0 0.0000 0.0 0.0000 0 0.00

72 01 01 13 103.0 5.14 293.7 4 720.0 781.0 0.0000 0.0 0.0000 0 0.00

72 01 01 14 109.0 5.14 294.3 4 850.0 850.0 0.0000 0.0 0.0000 0 0.00

72 01 01 15 102.0 5.14 293.7 4 850.0 850.0 0.0000 0.0 0.0000 0 0.00

72 01 01 16 114.0 5.14 293.7 4 850.0 850.0 0.0000 0.0 0.0000 0 0.00

72 01 01 17 71.0 3.60 290.9 5 850.0 840.0 0.0000 0.0 0.0000 0 0.00

72 01 01 18 37.0 3.60 288.2 5 850.0 777.0 0.0000 0.0 0.0000 0 0.00

72 01 01 19 174.0 6.69 284.3 4 850.0 850.0 0.0000 0.0 0.0000 0 0.00

72 01 01 20 117.0 4.12 284.3 5 850.0 651.0 0.0000 0.0 0.0000 0 0.00

72 01 01 21 180.0 5.66 280.4 4 850.0 850.0 0.0000 0.0 0.0000 0 0.00

72 01 01 22 202.0 4.12 282.0 5 850.0 526.0 0.0000 0.0 0.0000 0 0.00

72 01 01 23 100.0 4.63 281.5 5 850.0 463.0 0.0000 0.0 0.0000 0 0.00

72 01 01 24 180.0 2.57 280.9 6 850.0 400.0 0.0000 0.0 0.0000 0 0.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.

FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): VOL5 , VOL6 , VOL7 , VOL8 , VOL9 , VOL10 , VOL17 ,

VOL18 , VOL19 , VOL20 , VOL21 , VOL22 , VOL27 , VOL28 , VOL29 , VOL30 , VOL31 , VOL32 , VOL39 ,

VOL40 , VOL41 , VOL42 , VOL43 , VOL44 , VOL50 , VOL51 , VOL52 , VOL53 , VOL54 , VOL55 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

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

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
181.20	612.75	1.21423	(72081024)	156.16	587.71	1.62572	(72081024)
223.43	620.03	1.98738	(72112724)	247.94	620.00	2.17893	(72112724)
272.46	619.96	2.24045	(72112724)	296.97	619.92	2.26681	(72112724)
321.49	619.89	2.20177	(72112724)	346.00	619.85	2.25957	(72112724)
370.52	619.81	2.21651	(72112724)	395.03	619.78	2.40241	(72080424)
419.55	619.74	2.55768	(72080424)	444.06	619.70	2.66456	(72080424)

468.58	619.67	2.68768 (72080424)	493.09	619.63	3.16414 (72092924)
517.61	619.59	3.44190 (72092924)	542.12	619.56	3.54451 (72092924)
566.64	619.52	3.57146 (72112724)	591.15	619.48	3.66517 (72112724)
615.67	619.45	3.38290 (72112724)	640.18	619.41	2.47098 (72081924)
682.80	587.07	3.09793 (72070224)	690.11	544.97	3.24426 (72092824)
690.11	520.52	3.66290 (72092824)	690.11	496.08	3.98024 (72092824)
690.11	471.64	4.05395 (72092824)	690.11	447.20	3.97082 (72092824)
690.11	422.75	3.75735 (72092824)	690.11	398.31	3.37477 (72092824)
690.11	373.87	3.14020 (72092824)	690.11	349.42	2.92895 (72092824)
690.11	324.98	2.79753 (72092824)	690.11	300.54	2.79988 (72092824)
690.11	276.10	2.69427 (72092824)	690.11	251.65	2.69224 (72092824)
690.11	227.21	2.60150 (72092824)	690.11	202.77	2.35764 (72092824)
690.11	178.33	2.24550 (72080824)	690.11	153.88	2.09822 (72080824)
690.11	129.44	1.99447 (72112124)	657.74	86.75	2.22672 (72112124)
615.56	79.48	3.52355 (72080124)	591.08	79.51	4.05918 (72080124)
566.60	79.55	4.21682 (72080124)	542.12	79.59	3.99887 (72080124)
517.64	79.62	3.08628 (72112024)	493.16	79.66	2.41045 (72111824)
468.68	79.70	2.13907 (72111824)	444.20	79.73	1.94112 (72111824)
419.73	79.77	1.79048 (72111824)	395.25	79.81	1.69937 (72111824)
370.77	79.84	1.64163 (72101224)	346.29	79.88	1.62692 (72101224)
321.81	79.92	1.61077 (72101224)	297.33	79.95	1.59771 (72101224)
272.85	79.99	1.57519 (72101224)	248.37	80.03	1.53993 (72101224)
223.89	80.06	1.45781 (72101224)	199.42	80.10	1.41283 (72111824)
156.81	112.39	1.24460 (72101724)	149.45	154.47	1.26379 (72101724)
149.42	178.91	1.26870 (72101724)	149.38	203.35	1.36509 (72101124)

*** ISCST3 - VERSION 02035 *** *** The Avenue *** 09/05/08

*** Construction PM10 Exhaust *** 17:04:45

**MODELOPTs: PAGE 24

CONC URBAN FLAT FLGPOL NOCALM

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

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

DATE NETWORK

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

- -

ALL HIGH 1ST HIGH VALUE IS 4.21682 ON 72080124: AT (566.60, 79.55, 0.00, 2.00) DC NA

*** RECEPTOR TYPES: GC = GRIDCART

GP = GRIDPOLR

DC = DISCCART

DP = DISCPOLR

BD = BOUNDARY

149.35	227.80	1.48877 (72101124)	149.31	252.24	1.58577 (72101124)
149.27	276.68	1.67454 (72101124)	149.24	301.13	1.75680 (72101124)
149.20	325.57	1.83731 (72101124)	149.17	350.01	1.92494 (72101124)
149.13	374.45	2.00894 (72101124)	149.09	398.90	2.06772 (72101124)
149.06	423.34	2.11511 (72101724)	149.02	447.78	2.79430 (72102024)
148.98	472.23	3.68463 (72102024)	148.95	496.67	3.80092 (72102024)
148.91	521.11	3.59468 (72102024)	148.88	545.55	3.07914 (72102024)

*** ISCST3 - VERSION 02035 *** *** The Avenue *** 09/05/08

*** Construction PM10 Exhaust *** 17:04:45

**MODELOPTs: PAGE 25

CONC URBAN FLAT FLGPOL NOCALM

*** Message Summary : ISCST3 Model Execution ***

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

A Total of 0 Fatal Error Message(s)

A Total of 0 Warning Message(s)

A Total of 812 Informational Message(s)

A Total of 812 Calm Hours Identified

******** FATAL ERROR MESSAGES ********

*** NONE ***

******** WARNING MESSAGES ********

*** NONE ***

****

*** ISCST3 Finishes Successfully ***

****

```
**
****************************************
**
** ISCST3 Input Produced by:
** ISC-AERMOD View Ver. 5.9.0
** Lakes Environmental Software Inc.
** Date: 9/5/2008
** File: C:\Documents and Settings\staff\Desktop\2719 Cons LST\Dust.INP
**
****************************************
**
**
****************************************
** ISCST3 Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE The Avenue
   TITLETWO Construction Dust
   MODELOPT CONC DRYDPLT  URBAN NOCALM
   AVERTIME 24
   POLLUTID FUG
   TERRHGTS FLAT
   FLAGPOLE 2.00
   RUNORNOT RUN
CO FINISHED
**
****************************************
** ISCST3 Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION AREA1 AREA -545.340 -93.140
** Source Parameters **
   SRCPARAM AREA1 6.222E-07 1.000 450.000 450.000 0.000

** Variable Emissions Type: "By Hour-of-Day"
** Variable Emission Scenario: "Scenario 1"
   EMISFACT AREA1 HROFDY 0 0 0 0 0 0
   EMISFACT AREA1 HROFDY 0 1 1 1 1 1
   EMISFACT AREA1 HROFDY 1 1 1 0 0 0
   EMISFACT AREA1 HROFDY 0 0 0 0 0 0
   PARTDIAM AREA1 1 2.5 10
   MASSFRAX AREA1 0.0787 0.1292 0.7922
   PARTDENS AREA1 2.3 2.3 2.3
   SRCGROUP ALL
SO FINISHED
**
****************************************
** ISCST3 Receptor Pathway
****************************************
**
**
RE STARTING
** DESCRREC "FENCEPRI" "Cartesian plant boundary Primary Receptors"
   DISCCART     -545.74      -92.95    2.00
   DISCCART     -545.74      357.01    2.00
   DISCCART      -95.78      356.33    2.00
   DISCCART      -95.10      -92.95    2.00
** DESCRREC "FENCEINT" "Cartesian plant boundary Intermediate Receptors"
   DISCCART     -545.74      -67.95    2.00
   DISCCART     -545.74      -42.95    2.00
   DISCCART     -545.74      -17.96    2.00
   DISCCART     -545.74        7.04    2.00
   DISCCART     -545.74       32.04    2.00
   DISCCART     -545.74       57.04    2.00
   DISCCART     -545.74       82.03    2.00
   DISCCART     -545.74      107.03    2.00
   DISCCART     -545.74      132.03    2.00
   DISCCART     -545.74      157.03    2.00
   DISCCART     -545.74      182.03    2.00
   DISCCART     -545.74      207.02    2.00
   DISCCART     -545.74      232.02    2.00
   DISCCART     -545.74      257.02    2.00
   DISCCART     -545.74      282.02    2.00
   DISCCART     -545.74      307.01    2.00
   DISCCART     -545.74      332.01    2.00
   DISCCART     -520.74      356.97    2.00
   DISCCART     -495.74      356.93    2.00
   DISCCART     -470.75      356.90    2.00
   DISCCART     -445.75      356.86    2.00
   DISCCART     -420.75      356.82    2.00
   DISCCART     -395.75      356.78    2.00
   DISCCART     -370.76      356.75    2.00
   DISCCART     -345.76      356.71    2.00
   DISCCART     -320.76      356.67    2.00
   DISCCART     -295.76      356.63    2.00
   DISCCART     -270.76      356.59    2.00
   DISCCART     -245.77      356.56    2.00
   DISCCART     -220.77      356.52    2.00
   DISCCART     -195.77      356.48    2.00
   DISCCART     -170.77      356.44    2.00
   DISCCART     -145.78      356.41    2.00
   DISCCART     -120.78      356.37    2.00
   DISCCART      -95.74      331.37    2.00
```

DISCCART -95.70 306.41 2.00
DISCCART -95.67 281.45 2.00
DISCCART -95.63 256.49 2.00
DISCCART -95.59 231.53 2.00
DISCCART -95.55 206.57 2.00
DISCCART -95.52 181.61 2.00
DISCCART -95.48 156.65 2.00
DISCCART -95.44 131.69 2.00
DISCCART -95.40 106.73 2.00
DISCCART -95.36 81.77 2.00
DISCCART -95.33 56.81 2.00
DISCCART -95.29 31.85 2.00
DISCCART -95.25 6.89 2.00
DISCCART -95.21 -18.07 2.00
DISCCART -95.18 -43.03 2.00
DISCCART -95.14 -67.99 2.00
DISCCART -118.82 -92.95 2.00
DISCCART -142.54 -92.95 2.00
DISCCART -166.25 -92.95 2.00
DISCCART -189.97 -92.95 2.00
DISCCART -213.69 -92.95 2.00
DISCCART -237.41 -92.95 2.00
DISCCART -261.13 -92.95 2.00
DISCCART -284.84 -92.95 2.00
DISCCART -308.56 -92.95 2.00

DISCCART -332.28 -92.95 2.00
DISCCART -356.00 -92.95 2.00
DISCCART -379.71 -92.95 2.00
DISCCART -403.43 -92.95 2.00
DISCCART -427.15 -92.95 2.00
DISCCART -450.87 -92.95 2.00
DISCCART -474.59 -92.95 2.00
DISCCART -498.30 -92.95 2.00
DISCCART -522.02 -92.95 2.00
RE FINISHED
**
****
** ISCST3 Meteorology Pathway
****
**
**
ME STARTING
INPUTFIL U:\UcAir\DEPOSI~1\upland.dep
ANEMHGHT 10 METERS
SURFDATA 54147 1981
UAIRDATA 99999 1981
ME FINISHED
**
****
** ISCST3 Output Pathway

****
**
**
OU STARTING
RECTABLE ALLAVE 1ST
RECTABLE 24 1ST
** Auto-Generated Plotfiles
PLOTFILE 24 ALL 1ST DUST.IS\24H1GALL.PLT
OU FINISHED

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

*** ISCST3 - VERSION 02035 *** *** The Avenue *** 09/05/08
*** Construction Dust *** 17:07:54
**MODELOPTs: PAGE 1
CONC URBAN FLAT FLGPOL NOCALM DRYDPL

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

**Intermediate Terrain Processing is Selected

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

-- SCAVENGING/DEPOSITION LOGIC --
**Model Uses DRY DEPLETION. DDPLETE = T
**Model Uses NO WET DEPLETION. WDPLETE = F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses User-Specified Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.

4. Not Use Calms Processing Routine.

5. Not Use Missing Data Processing Routine.

6. Default Wind Profile Exponents.

7. Default Vertical Potential Temperature Gradients.

**Model Assumes Receptors on FLAT Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

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

**This Run Includes: 1 Source(s); 1 Source Group(s); and 73 Receptor(s)

**The Model Assumes A Pollutant Type of: FUG

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

**Output Options Selected:

Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)

Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; 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: Dust.INP

**Output Print File: Dust.OUT

CONC URBAN FLAT FLGPOL NOCALM DRYDPL

*** AREA SOURCE DATA ***

NUMBER EMISSION RATE COORD (SW CORNER) BASE RELEASE X-DIM Y-DIM ORIENT. INIT. EMISSION RATE

SOURCE PART. (GRAMS/SEC X Y ELEV. HEIGHT OF AREA OF AREA OF AREA SZ SCALAR VARY

ID CATS. /METER**2) (METERS) (METERS) (METERS) (METERS) (METERS) (METERS) (DEG.) (METERS) BY

- -

AREA1 3 0.62220E-06 -545.3 -93.1 0.0 1.00 450.00 450.00 0.00 0.00 HROFDY

CONC URBAN FLAT FLGPOL NOCALM DRYDPL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

ALL AREA1 ,

CONC URBAN FLAT FLGPOL NOCALM DRYDPL

*** SOURCE PARTICULATE/GAS DATA ***

*** SOURCE ID = AREA1 ; SOURCE TYPE = AREA ***

MASS FRACTION =

0.07870, 0.12920, 0.79220,

PARTICLE DIAMETER (MICRONS) =

1.00000, 2.50000, 10.00000,

PARTICLE DENSITY (G/CM**3) =

2.30000, 2.30000, 2.30000,

CONC URBAN FLAT FLGPOL NOCALM DRYDPL

* 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 = AREA1 ; SOURCE TYPE = AREA :

1 .00000E+00 2 .00000E+00 3 .00000E+00 4 .00000E+00 5 .00000E+00 6
.00000E+00

7 .00000E+00 8 .10000E+01 9 .10000E+01 10 .10000E+01 11 .10000E+01 12
.10000E+01

13 .10000E+01 14 .10000E+01 15 .10000E+01 16 .00000E+00 17 .00000E+00 18
.00000E+00

19 .00000E+00 20 .00000E+00 21 .00000E+00 22 .00000E+00 23 .00000E+00 24
.00000E+00

CONC URBAN FLAT FLGPOL NOCALM DRYDPL

*** DISCRETE CARTESIAN RECEPTORS ***

(X-COORD, Y-COORD, ZELEV, ZFLAG)

(METERS)

(-545.7, -92.9, 0.0, 2.0); (-545.7, 357.0, 0.0, 2.0);
(-95.8, 356.3, 0.0, 2.0); (-95.1, -92.9, 0.0, 2.0);
(-545.7, -67.9, 0.0, 2.0); (-545.7, -43.0, 0.0, 2.0);
(-545.7, -18.0, 0.0, 2.0); (-545.7, 7.0, 0.0, 2.0);
(-545.7, 32.0, 0.0, 2.0); (-545.7, 57.0, 0.0, 2.0);
(-545.7, 82.0, 0.0, 2.0); (-545.7, 107.0, 0.0, 2.0);
(-545.7, 132.0, 0.0, 2.0); (-545.7, 157.0, 0.0, 2.0);
(-545.7, 182.0, 0.0, 2.0); (-545.7, 207.0, 0.0, 2.0);
(-545.7, 232.0, 0.0, 2.0); (-545.7, 257.0, 0.0, 2.0);
(-545.7, 282.0, 0.0, 2.0); (-545.7, 307.0, 0.0, 2.0);
(-545.7, 332.0, 0.0, 2.0); (-520.7, 357.0, 0.0, 2.0);
(-495.7, 356.9, 0.0, 2.0); (-470.8, 356.9, 0.0, 2.0);
(-445.8, 356.9, 0.0, 2.0); (-420.8, 356.8, 0.0, 2.0);
(-395.8, 356.8, 0.0, 2.0); (-370.8, 356.8, 0.0, 2.0);
(-345.8, 356.7, 0.0, 2.0); (-320.8, 356.7, 0.0, 2.0);
(-295.8, 356.6, 0.0, 2.0); (-270.8, 356.6, 0.0, 2.0);
(-245.8, 356.6, 0.0, 2.0); (-220.8, 356.5, 0.0, 2.0);
(-195.8, 356.5, 0.0, 2.0); (-170.8, 356.4, 0.0, 2.0);
(-145.8, 356.4, 0.0, 2.0); (-120.8, 356.4, 0.0, 2.0);
(-95.7, 331.4, 0.0, 2.0); (-95.7, 306.4, 0.0, 2.0);
(-95.7, 281.5, 0.0, 2.0); (-95.6, 256.5, 0.0, 2.0);
(-95.6, 231.5, 0.0, 2.0); (-95.6, 206.6, 0.0, 2.0);
(-95.5, 181.6, 0.0, 2.0); (-95.5, 156.6, 0.0, 2.0);
(-95.4, 131.7, 0.0, 2.0); (-95.4, 106.7, 0.0, 2.0);
(-95.4, 81.8, 0.0, 2.0); (-95.3, 56.8, 0.0, 2.0);
(-95.3, 31.9, 0.0, 2.0); (-95.3, 6.9, 0.0, 2.0);
(-95.2, -18.1, 0.0, 2.0); (-95.2, -43.0, 0.0, 2.0);
(-95.1, -68.0, 0.0, 2.0); (-118.8, -92.9, 0.0, 2.0);
(-142.5, -92.9, 0.0, 2.0); (-166.3, -92.9, 0.0, 2.0);
(-190.0, -92.9, 0.0, 2.0); (-213.7, -92.9, 0.0, 2.0);
(-237.4, -92.9, 0.0, 2.0); (-261.1, -92.9, 0.0, 2.0);
(-284.8, -92.9, 0.0, 2.0); (-308.6, -92.9, 0.0, 2.0);
(-332.3, -92.9, 0.0, 2.0); (-356.0, -92.9, 0.0, 2.0);
(-379.7, -92.9, 0.0, 2.0); (-403.4, -92.9, 0.0, 2.0);
(-427.1, -92.9, 0.0, 2.0); (-450.9, -92.9, 0.0, 2.0);
(-474.6, -92.9, 0.0, 2.0); (-498.3, -92.9, 0.0, 2.0);
(-522.0, -92.9, 0.0, 2.0);

*** 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

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,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
B	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
C	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00
D	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00
E	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00
F	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***

(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

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

FILE: U:\UcAir\DEPOSI~1\upland.dep
FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 54147   UPPER AIR STATION NO.: 99999
NAME: UNKNOWN   NAME: UNKNOWN
YEAR: 1981   YEAR: 1981

YR MN DY HR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
81 01 01 01	134.8	1.00	284.3	7	522.6	170.0	0.0476	4.5	0.1500	0	0.00
81 01 01 02	147.4	1.00	284.3	7	507.0	170.0	0.0476	4.5	0.1500	0	0.00
81 01 01 03	152.5	1.34	283.1	7	491.4	170.0	0.0638	6.0	0.1500	0	0.00
81 01 01 04	166.0	0.00	283.1	7	475.8	170.0	0.0476	4.5	0.1500	0	0.00
81 01 01 05	151.5	0.00	282.6	7	460.3	170.0	0.0476	4.5	0.1500	0	0.00
81 01 01 06	139.5	1.34	283.1	7	444.7	170.0	0.0638	6.0	0.1500	0	0.00
81 01 01 07	162.0	1.34	285.4	6	1.4	170.7	0.0638	8.6	0.1500	0	0.00

81 01 01 08	157.1	0.00	287.6	5	47.0	192.0	0.1172	-18.8	0.1500	0	0.00
81 01 01 09	344.0	1.00	289.8	4	92.5	213.3	0.1490	-3.9	0.1500	0	0.00
81 01 01 10	346.6	0.00	291.5	3	138.0	234.7	0.1540	-3.3	0.1500	0	0.00
81 01 01 11	314.1	1.00	294.3	2	183.5	256.0	0.1578	-2.8	0.1500	0	0.00
81 01 01 12	238.1	1.34	297.6	2	229.0	277.3	0.1900	-5.1	0.1500	0	0.00
81 01 01 13	357.2	1.79	298.7	3	274.5	298.7	0.2294	-9.7	0.1500	0	0.00
81 01 01 14	34.2	2.24	299.8	3	320.0	320.0	0.2612	-19.6	0.1500	0	0.00
81 01 01 15	44.8	3.13	299.3	3	320.0	320.0	0.3255	-71.4	0.1500	0	0.00
81 01 01 16	75.7	3.13	298.7	4	320.0	320.0	0.2439	50.3	0.1500	0	0.00
81 01 01 17	65.1	1.79	295.4	5	325.6	318.5	0.0852	9.1	0.1500	0	0.00
81 01 01 18	97.6	1.34	291.5	6	357.2	310.3	0.0638	6.1	0.1500	0	0.00
81 01 01 19	133.0	1.00	289.8	7	388.8	302.1	0.0476	4.6	0.1500	0	0.00
81 01 01 20	145.7	0.00	287.0	7	420.4	293.9	0.0476	4.5	0.1500	0	0.00
81 01 01 21	223.6	1.00	286.5	7	452.0	285.7	0.0476	4.5	0.1500	0	0.00
81 01 01 22	159.5	1.00	287.0	7	483.5	277.4	0.0476	4.5	0.1500	0	0.00
81 01 01 23	158.2	1.34	285.9	7	515.1	269.2	0.0638	6.1	0.1500	0	0.00
81 01 01 24	134.7	1.00	285.4	7	546.7	261.0	0.0476	4.5	0.1500	0	0.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.

FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

CONC URBAN FLAT FLGPOL NOCALM DRYDPL

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): AREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

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

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
-545.74	-92.95	2.36637	(81112724)	-545.74	357.01	1.91918	(81121324)
-95.78	356.33	2.26649	(81050224)	-95.10	-92.95	1.89771	(81012924)
-545.74	-67.95	2.33901	(81112724)	-545.74	-42.95	2.30214	(81112724)
-545.74	-17.96	2.31897	(81123024)	-545.74	7.04	2.36878	(81123024)
-545.74	32.04	2.41133	(81123024)	-545.74	57.04	2.46373	(81121324)
-545.74	82.03	2.50891	(81121324)	-545.74	107.03	2.54540	(81121324)
-545.74	132.03	2.57472	(81121324)	-545.74	157.03	2.59598	(81121324)
-545.74	182.03	2.61203	(81121324)	-545.74	207.02	2.62771	(81121324)
-545.74	232.02	2.63910	(81121324)	-545.74	257.02	2.63978	(81121324)
-545.74	282.02	2.62240	(81121324)	-545.74	307.01	2.56915	(81121324)
-545.74	332.01	2.46652	(81121324)	-520.74	356.97	2.19710	(81121324)
-495.74	356.93	2.27313	(81042424)	-470.75	356.90	2.41988	(81010224)
-445.75	356.86	2.52034	(81010224)	-420.75	356.82	2.59820	(81010224)
-395.75	356.78	2.65562	(81010224)	-370.76	356.75	2.69777	(81010224)
-345.76	356.71	2.72485	(81010224)	-320.76	356.67	2.73579	(81010224)
-295.76	356.63	2.74469	(81010224)	-270.76	356.59	2.73835	(81010224)
-245.77	356.56	2.72324	(81010224)	-220.77	356.52	2.69011	(81010224)
-195.77	356.48	2.63524	(81010224)	-170.77	356.44	2.56970	(81050224)
-145.78	356.41	2.57506	(81050224)	-120.78	356.37	2.54319	(81050224)
-95.74	331.37	2.29921	(81050224)	-95.70	306.41	2.29311	(81020324)
-95.67	281.45	2.38760	(81020224)	-95.63	256.49	2.45180	(81020224)
-95.59	231.53	2.51228	(81011224)	-95.55	206.57	2.57354	(81011224)
-95.52	181.61	2.61968	(81011224)	-95.48	156.65	2.65533	(81011224)
-95.44	131.69	2.68119	(81011224)	-95.40	106.73	2.69782	(81011224)
-95.36	81.77	2.70510	(81011224)	-95.33	56.81	2.70901	(81011224)
-95.29	31.85	2.70120	(81011224)	-95.25	6.89	2.67360	(81011224)
-95.21	-18.07	2.62049	(81011224)	-95.18	-43.03	2.54533	(81011224)
-95.14	-67.99	2.38250	(81011224)	-118.82	-92.95	2.21648	(81012924)
-142.54	-92.95	2.31922	(81012924)	-166.25	-92.95	2.36832	(81012924)
-189.97	-92.95	2.39709	(81012924)	-213.69	-92.95	2.41458	(81012924)
-237.41	-92.95	2.46935	(81112724)	-261.13	-92.95	2.54705	(81112724)
-284.84	-92.95	2.60935	(81112724)	-308.56	-92.95	2.65947	(81112724)
-332.28	-92.95	2.69446	(81112724)	-356.00	-92.95	2.71738	(81112724)
-379.71	-92.95	2.73174	(81112724)	-403.43	-92.95	2.73387	(81112724)
-427.15	-92.95	2.72622	(81112724)	-450.87	-92.95	2.70920	(81112724)
-474.59	-92.95	2.68916	(81112724)	-498.30	-92.95	2.63861	(81112724)
-522.02	-92.95	2.55290	(81112724)				

CONC URBAN FLAT FLGPOL NOCALM DRYDPL

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

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

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

- -

ALL HIGH 1ST HIGH VALUE IS 2.74469 ON 81010224: AT (-295.76, 356.63, 0.00, 2.00) DC NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

CONC URBAN FLAT FLGPOL NOCALM DRYDPL

*** Message Summary : ISCST3 Model Execution ***

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

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 490 Informational Message(s)

A Total of 490 Calm Hours Identified

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

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

****
*** ISCST3 Finishes Successfully ***
****

OPERATIONS UNMITIGATED

NO_2[1]

Downwind Distance	NO_2/NO_X Ratio	SCREEN3 OP	NO_2 Concentration (ug/m3)	NO_2 Concentration (ppm)
20	0.05	1.042	0.06	2.941E-06
50	0.06	1.056	0.06	3.318E-06
70	0.06	1.065	0.07	3.630E-06
100	0.07	1.078	0.08	4.248E-06
200	0.11	1.120	0.13	6.800E-06
500	0.26	1.233	0.32	1.694E-05
1000	0.47	1.380	0.64	3.432E-05
2000	0.75	0.599	0.45	2.390E-05
3000	0.90	0.426	0.38	2.042E-05
4000	0.98	0.340	0.33	1.771E-05
5000	1.00	0.286	0.29	1.521E-05

CO

Pounds Per day	Grams Per day	Grams Per Second	Meters squared (area)
69.21	31393.128	1.09003916	2,302,661.303

Screen 3 Output
3.56E+07

FINAL Concentration
1.68E+01

0.015 ppm (1-hour)
0.011 ppm (8-hour)

PM_{10}[2] Dust

Pounds Per day	Grams Per day	Grams Per Second	Meters squared (area)
5.47	2481.1503	0.02871702	2,302,661.303

Screen 3 Output
4.54E+07

FINAL Concentration
5.66E-01

PM10 Calculation

$Cx = 0.9403\ C_o\ e^{-0.0462\ x}$

C_o[1]	2.26E-01
e	0.0992613
x (meters)	50
C_x	0.02

PM_{10}[2] Exhaust

Pounds Per day	Grams Per day	Grams Per Second
0.47	213.18841	0.00246746

Screen 3 Output
3.56E+07

FINAL Concentration
1.52E-02

Total PM_{10}:	0.04

[1] Per SCAQMD LST Handbook (Table 2-4) NO_X to NO_2 conversion factor
[2] Conversion factor of 0.4 applied to convert from one-hour max to 24-hour average (ARB Table H.1)

OPERATIONS MITIGATED

NO_2[1]

Downwind Distance	NO_2/NO_X Ratio	SCREEN3 OP	NO_2 Concentration (ug/m3)	NO_2 Concentration (ppm)
20	0.05	0.954	0.05	2.694E-06
50	0.06	0.967	0.06	3.038E-06
70	0.06	0.975	0.06	3.324E-06
100	0.07	0.987	0.07	3.891E-06
200	0.11	1.026	0.12	6.229E-06
500	0.26	1.129	0.29	1.551E-05
1000	0.47	1.264	0.59	3.144E-05
2000	0.75	0.548	0.41	2.189E-05
3000	0.90	0.390	0.35	1.870E-05
4000	0.98	0.311	0.30	1.621E-05
5000	1.00	0.262	0.26	1.393E-05

CO

Pounds Per day	Grams Per day	Grams Per Second	Meters squared (area)
60.55	27465.018	0.95364646	2,302,661.303

Screen 3 Output
3.56E+07

FINAL Concentration
1.47E+01

0.013 ppm (1-hour)
0.009 ppm (8-hour)

PM_{10}[2] Dust

Pounds Per day	Grams Per day	Grams Per Second	Meters squared (area)
5.33	2417.6473	0.02798203	2,302,661.303

Screen 3 Output
4.54E+07

FINAL Concentration
5.51E-01

PM10 Calculation

$Cx = 0.9403\ C_o\ e^{-0.0462\ x}$

C_o[1]	2.20E-01
e	0.0992613
x (meters)	50
C_x	0.02

PM_{10}[2] Exhaust

Pounds Per day	Grams Per day	Grams Per Second
0.46	208.65249	0.00241496

Screen 3 Output
3.56E+07

FINAL Concentration
1.49E-02

Total PM_{10}:	0.04

[1] Per SCAQMD LST Handbook (Table 2-4) NO_X to NO_2 conversion factor
[2] Conversion factor of 0.4 applied to convert from one-hour max to 24-hour average (ARB Table H.1)

9/8/2008 01:59:37 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: U:\UcJobs_02600-03000_02700\02719\Urbemis\2719 Ops LST.urb924

Project Name: The Avenue Operations LST

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

	NOx	CO	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	4.69	8.03	0.03	0.03
TOTALS (lbs/day, mitigated)	3.76	7.60	0.03	0.03
Percent Reduction	19.83	5.35	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	NOx	CO	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	5.63	54.02	5.77	1.20
TOTALS (lbs/day, mitigated)	5.49	52.64	5.62	1.17
Percent Reduction	2.49	2.55	2.60	2.50

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	NOx	CO	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	10.32	62.05	5.80	1.23
TOTALS (lbs/day, mitigated)	9.25	60.24	5.65	1.20
Percent Reduction	10.37	2.92	2.59	2.44

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	NOx	CO	PM10	PM2.5
Natural Gas	4.62	2.17	0.01	0.01
Hearth - No Summer Emissions				
Landscape	0.07	5.86	0.02	0.02
Consumer Products				
Architectural Coatings				
TOTALS (lbs/day, unmitigated)	4.69	8.03	0.03	0.03

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	NOx	CO	PM10	PM2.5
Natural Gas	3.69	1.74	0.01	0.01
Hearth - No Summer Emissions				
Landscape	0.07	5.86	0.02	0.02
Consumer Products				
Architectural Coatings				
TOTALS (lbs/day, mitigated)	3.76	7.60	0.03	0.03

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

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 Summer Pounds Per Day, Unmitigated

9/8/2008 01:59:37 PM

Source	NOX	CO	PM10	PM25
Single family housing	1.04	10.84	1.05	0.22
Condo/townhouse general	2.29	23.98	2.32	0.49
Commercial	2.30	19.20	2.40	0.49
TOTALS (lbs/day, unmitigated)	5.63	54.02	5.77	1.20

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	NOX	CO	PM10	PM25
Single family housing	1.02	10.62	1.03	0.22
Condo/townhouse general	2.22	23.20	2.24	0.47
Commercial	2.25	18.82	2.35	0.48
TOTALS (lbs/day, mitigated)	5.49	52.64	5.62	1.17

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2015 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
Single family housing	20.67	9.57	dwelling units	62.00	593.34	593.34
Condo/townhouse general	14.00	5.86	dwelling units	224.00	1,312.64	1,312.64
Commercial		17.97	1000 sq ft	76.00	1,365.72	1,365.72
					3,271.70	3,271.70

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	46.0	0.2	99.8	0.0
Light Truck < 3750 lbs	10.0	1.0	96.0	3.0
Light Truck 3751-5750 lbs	21.0	0.5	99.5	0.0
Med Truck 5751-8500 lbs	11.5	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	81.0	19.0
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	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	4.3	48.8	51.2	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.4	0.0	92.9	7.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	1.0	1.0	1.0	1.0	1.0	1.0
Rural Trip Length (miles)	1.0	1.0	1.0	1.0	1.0	1.0
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)						
Commercial				2.0	1.0	97.0

9/8/2008 01:59:51 PM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: U:\UcJobs_02600-03000_02700\02719\Urbemis\2719 Ops LST.urb924

Project Name: The Avenue Operations LST

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

	NOx	CO	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	6.37	2.92	0.15	0.15
TOTALS (lbs/day, mitigated)	5.44	2.49	0.15	0.15
Percent Reduction	14.60	14.73	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	NOx	CO	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	6.59	60.43	5.77	1.20
TOTALS (lbs/day, mitigated)	6.42	58.88	5.62	1.17
Percent Reduction	2.58	2.56	2.60	2.50

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	NOx	CO	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	12.96	63.35	5.92	1.35
TOTALS (lbs/day, mitigated)	11.86	61.37	5.77	1.32
Percent Reduction	8.49	3.13	2.53	2.22

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	NOx	CO	PM10	PM2.5
Natural Gas	4.62	2.17	0.01	0.01
Hearth	1.75	0.75	0.14	0.14
Landscaping - No Winter Emissions				
Consumer Products				
Architectural Coatings				
TOTALS (lbs/day, unmitigated)	6.37	2.92	0.15	0.15

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

Source	NOx	CO	PM10	PM2.5
Natural Gas	3.69	1.74	0.01	0.01
Hearth	1.75	0.75	0.14	0.14
Landscaping - No Winter Emissions				
Consumer Products				
Architectural Coatings				
TOTALS (lbs/day, mitigated)	5.44	2.49	0.15	0.15

Area Source Changes to Defaults

Percent residential using natural gas changed from 78% to 100%

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

9/8/2008 01:59:51 PM

Source	NOX	CO	PM10	PM25
Single family housing	1.22	11.91	1.05	0.22
Condo/townhouse general	2.69	26.35	2.32	0.49
Commercial	2.68	22.17	2.40	0.49
TOTALS (lbs/day, unmitigated)	6.59	60.43	5.77	1.20

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

Source	NOX	CO	PM10	PM25
Single family housing	1.19	11.67	1.03	0.22
Condo/townhouse general	2.60	25.49	2.24	0.47
Commercial	2.63	21.72	2.35	0.48
TOTALS (lbs/day, mitigated)	6.42	58.88	5.62	1.17

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2015 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
Single family housing	20.67	9.57	dwelling units	62.00	593.34	593.34
Condo/townhouse general	14.00	5.86	dwelling units	224.00	1,312.64	1,312.64
Commercial		17.97	1000 sq ft	76.00	1,365.72	1,365.72
					3,271.70	3,271.70

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	46.0	0.2	99.8	0.0
Light Truck < 3750 lbs	10.0	1.0	96.0	3.0
Light Truck 3751-5750 lbs	21.0	0.5	99.5	0.0
Med Truck 5751-8500 lbs	11.5	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	81.0	19.0
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	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	4.3	48.8	51.2	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.4	0.0	92.9	7.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	1.0	1.0	1.0	1.0	1.0	1.0
Rural Trip Length (miles)	1.0	1.0	1.0	1.0	1.0	1.0
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)						
Commercial				2.0	1.0	97.0

09/08/08
14:43:55

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

C:\Documents and Settings\mtirohn\Desktop\Screen3\02719\CO.scr

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE                  =        AREA
   EMISSION RATE (G/(S-M**2))  =      1.00000
   SOURCE HEIGHT (M)            =       5.0000
   LENGTH OF LARGER SIDE (M)    =    1517.4520
   LENGTH OF SMALLER SIDE (M)  =    1517.4520
   RECEPTOR HEIGHT (M)          =       2.0000
   URBAN/RURAL OPTION           =        URBAN
THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =    .000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME  MAX DIR
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   (DEG)
-------  ----------  ----  -----  -----  ------  ------  -------
    50.   .3555E+08    5     1.0    1.0 10000.0    5.00     45.

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION        MAX CONC     DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)     MAX (M)    HT (M)
--------------    -----------   -------   -------
SIMPLE TERRAIN      .3555E+08       50.        0.


***************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
***************************************************
```

09/08/08
14:44:22

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

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```
SIMPLE TERRAIN INPUTS:
   SOURCE TYPE                  =        AREA
   EMISSION RATE (G/(S-M**2))   =      .297075E-07
   SOURCE HEIGHT (M)            =       5.0000
   LENGTH OF LARGER SIDE (M)    =    1517.4520
   LENGTH OF SMALLER SIDE (M)   =    1517.4520
   RECEPTOR HEIGHT (M)          =       2.0000
   URBAN/RURAL OPTION           =        URBAN
THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
20.	1.042	5	1.0	1.0	10000.0	5.00	45.
50.	1.056	5	1.0	1.0	10000.0	5.00	45.
70.	1.065	5	1.0	1.0	10000.0	5.00	45.
100.	1.078	5	1.0	1.0	10000.0	5.00	45.
200.	1.120	5	1.0	1.0	10000.0	5.00	45.
500.	1.233	5	1.0	1.0	10000.0	5.00	45.
1000.	1.380	5	1.0	1.0	10000.0	5.00	45.
2000.	.5985	5	1.0	1.0	10000.0	5.00	45.
3000.	.4261	5	1.0	1.0	10000.0	5.00	45.
4000.	.3400	5	1.0	1.0	10000.0	5.00	45.
5000.	.2856	5	1.0	1.0	10000.0	5.00	45.

```
     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************
```

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1.380	1000.	0.

```
**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

09/08/08
14:45:03

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

C:\Documents and Settings\mtirohn\Desktop\Screen3\02719\NO2 Mit.scr

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/(S-M**2))	=	.272000E-07
SOURCE HEIGHT (M)	=	5.0000
LENGTH OF LARGER SIDE (M)	=	1517.4520
LENGTH OF SMALLER SIDE (M)	=	1517.4520
RECEPTOR HEIGHT (M)	=	2.0000
URBAN/RURAL OPTION	=	URBAN

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M**4/S**3; MOM. FLUX = .000 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN DISCRETE DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
20.	.9544	5	1.0	1.0	10000.0	5.00	45.
50.	.9670	5	1.0	1.0	10000.0	5.00	45.
70.	.9752	5	1.0	1.0	10000.0	5.00	45.
100.	.9873	5	1.0	1.0	10000.0	5.00	45.
200.	1.026	5	1.0	1.0	10000.0	5.00	45.
500.	1.129	5	1.0	1.0	10000.0	5.00	45.
1000.	1.264	5	1.0	1.0	10000.0	5.00	45.
2000.	.5480	5	1.0	1.0	10000.0	5.00	45.
3000.	.3901	5	1.0	1.0	10000.0	5.00	45.
4000.	.3113	5	1.0	1.0	10000.0	5.00	45.
5000.	.2615	5	1.0	1.0	10000.0	5.00	45.

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1.264	1000.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

09/08/08
14:44:39

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

C:\Documents and Settings\mtirohn\Desktop\Screen3\02719\Dust.scr

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE                  =        AREA
   EMISSION RATE (G/(S-M**2))   =     1.00000
   SOURCE HEIGHT (M)            =      1.0000
   LENGTH OF LARGER SIDE (M)    =   1517.4520
   LENGTH OF SMALLER SIDE (M)   =   1517.4520
   RECEPTOR HEIGHT (M)          =      2.0000
   URBAN/RURAL OPTION           =       URBAN
THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME  MAX DIR
   (M)   (UG/M**3)   STAB   (M/S)  (M/S)    (M)   HT (M)   (DEG)
-------  ----------  ----  -----  -----  ------  ------  -------
     1.   .4536E+08    6     1.0    1.0 10000.0    1.00     45.

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION        MAX CONC    DIST TO    TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)     HT (M)
--------------    -----------   -------    -------
SIMPLE TERRAIN     .4536E+08        1.         0.


***************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
***************************************************
```

<u>APPENDIX D</u>

CL4 CO “Hot Spot” Output and Emissions Factors Used in CO Analysis

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 282. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= 3.6 PPM	
SIGTH= 10. DEGREES	TEMP= 15.6 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB APP	20	-750	20	-150	AG	1833	3.9	.0	18.0
B. NB SLOW	20	-150	20	0	AG	1833	5.7	.0	18.0
C. NB SPEED	20	0	20	150	AG	1684	3.9	.0	18.0
D. NB DEPART	20	150	20	750	AG	1684	3.3	.0	18.0
E. NBL	12	-150	12	0	AG	239	5.7	.0	10.0
F. SB APP	-20	750	-20	150	AG	556	3.9	.0	22.0
G. SB SLOW	-20	150	-20	0	AG	556	5.7	.0	22.0
H. SB SPEED	-20	0	-20	-150	AG	948	3.9	.0	22.0
I. SB DEPART	-20	-150	-20	-750	AG	948	3.3	.0	22.0
J. SBL	-10	150	-10	0	AG	49	5.7	.0	10.0
K. EB APP	-750	-12	-150	-12	AG	1103	3.9	.0	14.0
L. EB SLOW	-150	-12	0	-12	AG	1103	5.7	.0	14.0
M. EB SPEED	0	-12	150	-12	AG	1192	3.9	.0	14.0
N. EB DEPART	150	-12	750	-12	AG	1192	3.3	.0	14.0
O. EBL	-150	-6	0	-6	AG	128	5.7	.0	10.0
P. WB APP	750	20	150	20	AG	1266	3.9	.0	18.0
Q. WB SLOW	150	20	0	20	AG	1266	5.7	.0	18.0
R. WB SPEED	0	20	-150	20	AG	1532	3.9	.0	18.0
S. WB DEPART	-150	20	-750	20	AG	1532	3.3	.0	18.0
T. WBL	150	12	0	12	AG	182	5.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

Archibald_and_Edison_AM
JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Rcpt_1	-31	29	1.8
2. Rcpt_2	29	29	1.8
3. Rcpt_3	29	-19	1.8
4. Rcpt_4	-31	-19	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Rcpt_1	97.	5.3	.0	.0	.2	.0	.0	.0	.2	.0
2. Rcpt_2	187.	5.8	.2	.8	.4	.0	.0	.0	.0	.0
3. Rcpt_3	277.	5.7	.0	.7	.0	.0	.0	.0	.0	.0
4. Rcpt_4	81.	5.4	.0	.2	.0	.0	.0	.0	.0	.2

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Rcpt_1	.0	.0	.0	.0	.0	.1	.0	.1	.6	.4	.0	.0
2. Rcpt_2	.1	.0	.0	.0	.1	.0	.0	.0	.5	.0	.0	.0
3. Rcpt_3	.0	.0	.0	.5	.4	.0	.0	.0	.0	.0	.2	.0
4. Rcpt_4	.0	.0	.0	.5	.4	.0	.0	.2	.0	.0	.0	.0

EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 282. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= 3.6 PPM	
SIGTH= 10. DEGREES	TEMP= 15.6 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB APP	20	-750	20	-150	AG	1757	3.7	.0	18.0
B. NB SLOW	20	-150	20	0	AG	1757	5.5	.0	18.0
C. NB SPEED	20	0	20	150	AG	1570	3.7	.0	18.0
D. NB DEPART	20	150	20	750	AG	1570	3.0	.0	18.0
E. NBL	12	-150	12	0	AG	77	5.5	.0	10.0
F. SB APP	-20	750	-20	150	AG	2123	3.7	.0	22.0
G. SB SLOW	-20	150	-20	0	AG	2123	5.5	.0	22.0
H. SB SPEED	-20	0	-20	-150	AG	3259	3.7	.0	22.0
I. SB DEPART	-20	-150	-20	-750	AG	3259	3.0	.0	22.0
J. SBL	-10	150	-10	0	AG	57	5.5	.0	10.0
K. EB APP	-750	-12	-150	-12	AG	2369	3.7	.0	14.0
L. EB SLOW	-150	-12	0	-12	AG	2369	5.5	.0	14.0
M. EB SPEED	0	-12	150	-12	AG	1613	3.7	.0	14.0
N. EB DEPART	150	-12	750	-12	AG	1613	3.0	.0	14.0
O. EBL	-150	-6	0	-6	AG	167	5.5	.0	10.0
P. WB APP	750	20	150	20	AG	1079	3.7	.0	18.0
Q. WB SLOW	150	20	0	20	AG	1079	5.5	.0	18.0
R. WB SPEED	0	20	-150	20	AG	1328	3.7	.0	18.0
S. WB DEPART	-150	20	-750	20	AG	1328	3.0	.0	18.0
T. WBL	150	12	0	12	AG	141	5.5	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

Archibald_and_Edison_PM
JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Rcpt_1	-31	29	1.8
2. Rcpt_2	29	29	1.8
3. Rcpt_3	29	-19	1.8
4. Rcpt_4	-31	-19	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Rcpt_1	172.	6.0	.2	.0	.0	.0	.0	.0	.5	.8
2. Rcpt_2	188.	5.8	.1	.7	.4	.0	.0	.0	.0	.0
3. Rcpt_3	276.	6.4	.0	.6	.0	.0	.0	.0	.0	.3
4. Rcpt_4	81.	6.4	.0	.2	.0	.0	.0	.0	.0	.7

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Rcpt_1	.2	.0	.0	.3	.0	.0	.0	.0	.0	.3	.0	.0
2. Rcpt_2	.3	.0	.0	.0	.2	.0	.0	.0	.4	.0	.0	.0
3. Rcpt_3	.0	.0	.2	1.0	.4	.0	.0	.0	.0	.0	.1	.0
4. Rcpt_4	.0	.0	.0	1.1	.4	.0	.0	.2	.0	.0	.0	.0

EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 282. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= 3.6 PPM	
SIGTH= 10. DEGREES	TEMP= 15.6 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB APP	20	-750	20	-150	AG	1593	3.9	.0	18.0
B. NB SLOW	20	-150	20	0	AG	1593	5.7	.0	18.0
C. NB SPEED	20	0	20	150	AG	1631	3.9	.0	18.0
D. NB DEPART	20	150	20	750	AG	1631	3.3	.0	18.0
E. NBL	12	-150	12	0	AG	167	5.7	.0	10.0
F. SB APP	-20	750	-20	150	AG	372	3.9	.0	22.0
G. SB SLOW	-20	150	-20	0	AG	372	5.7	.0	22.0
H. SB SPEED	-20	0	-20	-150	AG	342	3.9	.0	22.0
I. SB DEPART	-20	-150	-20	-750	AG	342	3.3	.0	22.0
J. SBL	-10	150	-10	0	AG	111	5.7	.0	10.0
K. EB APP	-750	-12	-150	-12	AG	1536	3.9	.0	22.0
L. EB SLOW	-150	-12	0	-12	AG	1536	5.7	.0	22.0
M. EB SPEED	0	-12	150	-12	AG	1791	3.9	.0	22.0
N. EB DEPART	150	-12	750	-12	AG	1791	3.3	.0	22.0
O. EBL	-150	0	0	0	AG	155	5.7	.0	14.0
P. WB APP	750	20	150	20	AG	2663	3.9	.0	22.0
Q. WB SLOW	150	20	0	20	AG	2663	5.7	.0	22.0
R. WB SPEED	0	20	-150	20	AG	2904	3.9	.0	22.0
S. WB DEPART	-150	20	-750	20	AG	2904	3.3	.0	22.0
T. WBL	150	8	0	8	AG	71	5.7	.0	14.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

Hamner_and_Edison_AM
JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	X (M)	Y (M)	Z (M)
1. Rcpt_1	-31	31	1.8
2. Rcpt_2	29	31	1.8
3. Rcpt_3	29	-23	1.8
4. Rcpt_4	-31	-23	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Rcpt_1	97.	6.0	.0	.0	.2	.0	.0	.0	.1	.0
2. Rcpt_2	262.	6.1	.0	.0	.4	.0	.0	.0	.0	.0
3. Rcpt_3	279.	5.8	.0	.6	.0	.0	.0	.0	.0	.0
4. Rcpt_4	81.	5.4	.0	.2	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Rcpt_1	.0	.0	.0	.0	.0	.2	.0	.2	1.0	.5	.0	.0
2. Rcpt_2	.0	.0	.2	.0	.0	.0	.0	.0	.7	.8	.2	.0
3. Rcpt_3	.0	.0	.1	.6	.3	.0	.0	.0	.0	.0	.3	.0
4. Rcpt_4	.0	.0	.0	.4	.5	.0	.0	.3	.1	.0	.0	.0

EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 282. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= 3.6 PPM	
SIGTH= 10. DEGREES	TEMP= 15.6 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB APP	20	-750	20	-150	AG	936	3.7	.0	18.0
B. NB SLOW	20	-150	20	0	AG	936	5.5	.0	18.0
C. NB SPEED	20	0	20	150	AG	1165	3.7	.0	18.0
D. NB DEPART	20	150	20	750	AG	1165	3.0	.0	18.0
E. NBL	12	-150	12	0	AG	125	5.5	.0	10.0
F. SB APP	-20	750	-20	150	AG	1690	3.7	.0	22.0
G. SB SLOW	-20	150	-20	0	AG	1690	5.5	.0	22.0
H. SB SPEED	-20	0	-20	-150	AG	2269	3.7	.0	22.0
I. SB DEPART	-20	-150	-20	-750	AG	2269	3.0	.0	22.0
J. SBL	-10	150	-10	0	AG	166	5.5	.0	10.0
K. EB APP	-750	-12	-150	-12	AG	2999	3.7	.0	22.0
L. EB SLOW	-150	-12	0	-12	AG	2999	5.5	.0	22.0
M. EB SPEED	0	-12	150	-12	AG	2913	3.7	.0	22.0
N. EB DEPART	150	-12	750	-12	AG	2913	3.0	.0	22.0
O. EBL	-150	0	0	0	AG	235	5.5	.0	14.0
P. WB APP	750	20	150	20	AG	2439	3.7	.0	22.0
Q. WB SLOW	150	20	0	20	AG	2439	5.5	.0	22.0
R. WB SPEED	0	20	-150	20	AG	2610	3.7	.0	22.0
S. WB DEPART	-150	20	-750	20	AG	2610	3.0	.0	22.0
T. WBL	150	8	0	8	AG	367	5.5	.0	14.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

Hamner_and_Edison_PM
JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
	COORDINATES (M)		
1. Rcpt_1	-31	31	1.8
2. Rcpt_2	29	31	1.8
3. Rcpt_3	29	-23	1.8
4. Rcpt_4	-31	-23	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
			CONC/LINK (PPM)							
1. Rcpt_1	98.	6.3	.0	.0	.1	.0	.0	.0	.5	.0
2. Rcpt_2	260.	6.1	.0	.0	.3	.0	.0	.0	.2	.0
3. Rcpt_3	277.	6.4	.0	.3	.0	.0	.0	.0	.0	.2
4. Rcpt_4	80.	6.4	.0	.1	.0	.0	.0	.0	.0	.5

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
	CONC/LINK (PPM)											
1. Rcpt_1	.0	.0	.0	.0	.0	.3	.0	.2	.9	.5	.0	.0
2. Rcpt_2	.0	.0	.3	.2	.0	.0	.0	.0	.7	.6	.1	.0
3. Rcpt_3	.0	.0	.2	1.1	.5	.0	.0	.0	.0	.0	.3	.0
4. Rcpt_4	.0	.0	.0	.9	.7	.1	.0	.3	.1	.0	.0	.0

EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	282. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	3.6 PPM		
SIGTH=	10. DEGREES	TEMP=	15.6 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB APP	20	-750	20	-150	AG	380	3.9	.0	10.0
B. NB SLOW	20	-150	20	0	AG	380	5.7	.0	10.0
C. NB SPEED	20	0	20	150	AG	751	3.9	.0	10.0
D. NB DEPART	20	150	20	750	AG	751	3.3	.0	10.0
E. NBL	16	-150	16	0	AG	228	5.7	.0	10.0
F. SB APP	-20	750	-20	150	AG	98	3.9	.0	10.0
G. SB SLOW	-20	150	-20	0	AG	98	5.7	.0	10.0
H. SB SPEED	-20	0	-20	-150	AG	365	3.9	.0	10.0
I. SB DEPART	-20	-150	-20	-750	AG	365	3.3	.0	10.0
J. SBL	-16	150	-16	0	AG	73	5.7	.0	10.0
K. EB APP	-750	-12	-150	-12	AG	1436	3.9	.0	18.0
L. EB SLOW	-150	-12	0	-12	AG	1436	5.7	.0	18.0
M. EB SPEED	0	-12	150	-12	AG	1513	3.9	.0	18.0
N. EB DEPART	150	-12	750	-12	AG	1513	3.3	.0	18.0
O. EBL	-150	-4	0	-4	AG	138	5.7	.0	10.0
P. WB APP	750	20	150	20	AG	2001	3.9	.0	18.0
Q. WB SLOW	150	20	0	20	AG	2001	5.7	.0	18.0
R. WB SPEED	0	20	-150	20	AG	1971	3.9	.0	18.0
S. WB DEPART	-150	20	-750	20	AG	1971	3.3	.0	18.0
T. WBL	150	12	0	12	AG	246	5.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

Mill_Creek_and_Edison_AM
JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Rcpt_1	-25	29	1.8
2. Rcpt_2	25	29	1.8
3. Rcpt_3	25	-21	1.8
4. Rcpt_4	-25	-21	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Rcpt_1	97.	5.6	.0	.0	.0	.0	.0	.0	.0	.0
2. Rcpt_2	262.	5.5	.0	.0	.2	.0	.0	.0	.0	.0
3. Rcpt_3	278.	5.4	.0	.2	.0	.0	.0	.0	.0	.0
4. Rcpt_4	80.	5.2	.0	.0	.0	.0	.0	.0	.0	.1

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Rcpt_1	.0	.0	.0	.0	.0	.2	.0	.2	.9	.4	.0	.0
2. Rcpt_2	.0	.0	.2	.0	.0	.0	.0	.0	.6	.6	.1	.0
3. Rcpt_3	.0	.0	.1	.7	.3	.0	.0	.0	.0	.0	.2	.0
4. Rcpt_4	.0	.0	.0	.5	.5	.0	.0	.3	.1	.0	.0	.0

EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S   Z0= 100. CM   ALT= 282. (M)
BRG= WORST CASE   VD= .0 CM/S
CLAS= 7 (G)   VS= .0 CM/S
MIXH= 1000. M   AMB= 3.6 PPM
SIGTH= 10. DEGREES   TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB APP	20	-750	20	-150	AG	221	3.7	.0	10.0
B. NB SLOW	20	-150	20	0	AG	221	5.5	.0	10.0
C. NB SPEED	20	0	20	150	AG	545	3.7	.0	10.0
D. NB DEPART	20	150	20	750	AG	545	3.0	.0	10.0
E. NBL	16	-150	16	0	AG	163	5.5	.0	10.0
F. SB APP	-20	750	-20	150	AG	208	3.7	.0	10.0
G. SB SLOW	-20	150	-20	0	AG	208	5.5	.0	10.0
H. SB SPEED	-20	0	-20	-150	AG	452	3.7	.0	10.0
I. SB DEPART	-20	-150	-20	-750	AG	452	3.0	.0	10.0
J. SBL	-16	150	-16	0	AG	233	5.5	.0	10.0
K. EB APP	-750	-12	-150	-12	AG	2524	3.7	.0	18.0
L. EB SLOW	-150	-12	0	-12	AG	2524	5.5	.0	18.0
M. EB SPEED	0	-12	150	-12	AG	2554	3.7	.0	18.0
N. EB DEPART	150	-12	750	-12	AG	2554	3.0	.0	18.0
O. EBL	-150	-4	0	-4	AG	179	5.5	.0	10.0
P. WB APP	750	20	150	20	AG	2130	3.7	.0	18.0
Q. WB SLOW	150	20	0	20	AG	2130	5.5	.0	18.0
R. WB SPEED	0	20	-150	20	AG	2191	3.7	.0	18.0
S. WB DEPART	-150	20	-750	20	AG	2191	3.0	.0	18.0
T. WBL	150	12	0	12	AG	84	5.5	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

Mill_Creek_and_Edison_PM
JOB: C:\Documents and Settings\mtirohn\Deskto
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Rcpt_1	-25	29	1.8
2. Rcpt_2	25	29	1.8
3. Rcpt_3	25	-21	1.8
4. Rcpt_4	-25	-21	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Rcpt_1	97.	5.7	.0	.0	.0	.0	.0	.0	.0	.0
2. Rcpt_2	261.	5.7	.0	.0	.2	.0	.0	.0	.0	.0
3. Rcpt_3	277.	5.9	.0	.0	.0	.0	.0	.0	.0	.0
4. Rcpt_4	278.	5.9	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Rcpt_1	.0	.0	.0	.0	.0	.2	.0	.2	1.0	.4	.0	.0
2. Rcpt_2	.0	.0	.3	.1	.0	.0	.0	.0	.7	.6	.0	.0
3. Rcpt_3	.0	.0	.2	1.1	.5	.0	.0	.0	.0	.0	.2	.0
4. Rcpt_4	.0	.0	.2	1.7	.0	.0	.0	.0	.0	.0	.3	.0

EXIT

This Spreadsheet Predicts Composite CO Emissions Factors For Use In the CO CALINE4 Model Analysis.

Model Year =	2015
AREA=	San Bernardino
PEAK HOUR=	AM

INPUT PARAMETERS

Hourly Miles (x1000) (From BURDEN2007)	4772
Hourly Idle Emissions (Tons) (From Buden 2007)	0.25
Hourly Start Emissions (Tons) (From Buden 2007)	4.36

Input Run Emissions (Grams/Mile) (From EMFAC2007) (@ 60 Degrees F, 70% humidity)

3MPH	4.85
4MPH	4.76
5MPH	4.67
10MPH	3.77
15MPH	3.13
20MPH	2.70
25MPH	2.42
30MPH	2.21
35MPH	2.05

OUTPUT PARAMETERS

Average Idle Emissions (Grams/Mile)	0.047526
Average Start Emissions (Grams/Mile)	0.828861

Average Total Emissions (Grams/Mile) (Includes Idle, Start, and Running Emissions)

3 MPH	5.73
4 MPH	5.63
5 MPH	5.55
6 MPH	5.36
7 MPH	5.18
8 MPH	5.00
9 MPH	4.82
10 MPH	4.64
11 MPH	4.52
12 MPH	4.39
13 MPH	4.26
14 MPH	4.13
15 MPH	4.01
16 MPH	3.92
17 MPH	3.84
18 MPH	3.75
19 MPH	3.66
20 MPH	3.58
21 MPH	3.52
22 MPH	3.47
23 MPH	3.41
24 MPH	3.35
25MPH	3.30
26 MPH	3.25
27 MPH	3.21
28 MPH	3.17
29 MPH	3.13
30MPH	3.08
31 MPH	3.05
32 MPH	3.02
33 MPH	2.99
34 MPH	2.95
35MPH	2.09

This Spreadsheet Predicts Composite CO Emissions Factors For Use In the CO CALINE4 Model Analysis.

Model Year =	2015
AREA=	San Bernardino
PEAK HOUR=	PM

INPUT PARAMETERS

Hourly Miles (x1000) (From BURDEN2007)	4881
Hourly Idle Emissions (Tons) (From Buden 2007)	0.1
Hourly Start Emissions (Tons) (From Buden 2007)	3.48

Input Run Emissions (Grams/Mile) (From EMFAC2007) (@ 60 Degrees F, 70% humidity)

3MPH	4.85
4MPH	4.76
5MPH	4.67
10MPH	3.77
15MPH	3.13
20MPH	2.70
25MPH	2.42
30MPH	2.21
35MPH	2.05

OUTPUT PARAMETERS

Average Idle Emissions (Grams/Mile)	0.018586
Average Start Emissions (Grams/Mile)	0.646794

Average Total Emissions (Grams/Mile) (Includes Idle, Start, and Running Emissions)

3 MPH	5.52
4 MPH	5.42
5 MPH	5.33
6 MPH	5.15
7 MPH	4.97
8 MPH	4.79
9 MPH	4.61
10 MPH	4.43
11 MPH	4.31
12 MPH	4.18
13 MPH	4.05
14 MPH	3.92
15 MPH	3.80
16 MPH	3.71
17 MPH	3.62
18 MPH	3.54
19 MPH	3.45
20 MPH	3.37
21 MPH	3.31
22 MPH	3.25
23 MPH	3.20
24 MPH	3.14
25MPH	3.09
26 MPH	3.04
27 MPH	3.00
28 MPH	2.96
29 MPH	2.91
30MPH	2.87
31 MPH	2.84
32 MPH	2.81
33 MPH	2.78
34 MPH	2.74
35MPH	2.06

APPENDIX E

List of Zero-Voc Architectural Coating Manufacturers

Super-Compliant Architectural Coating Manufacturers*

The following companies have informed the SCAQMD that they manufacture one or more Super-Compliant Architectural/Industrial (AIM) Coatings

ARCHITECTURAL COATINGS

Manufacturer	Type of Coatings	Interior	Exterior	Phone Number
Alistagen Corporation http://www.caliwel.com	PSU, F	YES	NO	866-280-0001 305-936-8691
American Formulators Mfg http://www.safecoatpaint.com	F, NFE, NFSG	YES	NO	619-239-0321
Anchor Paint http://www.anchorpaint.com	WPC/MS	NO	YES	918-836-4626
Benjamin Moore & Co http://www.benjaminmoore.com	PSU, F, NFS, NFE, NFSG	YES	NO	201-573-9600
Cloverdale Paint Inc http://www.cloverdalepaint.com	PSU, NF, IM	YES	YES	604 596 6261
Coronado Paint Co http://www.coronadopaint.com	F, NF, PSU	YES	NO	386-428-6461 x115
Diamond Vogel http://www.diamondvogel.com	F, NF, P	YES	NO	800-728-6435
Dunn Edwards http://www.dunneedwards.com	F, NF	YES	NO	888-337-2468
E-3 Coatings, Inc http://www.envirolast.com	S	NO	YES	530-308-2189
Frazee Industries http://www.frazeepaint.com	PSU, F, NFS, NFE, NFSG	YES	NO	858-626-3490
Fuhr International, LLC http://www.fuhrinternational.com	PSU, F, NF	YES	YES	800-558-7437 816-809-4403
ICI Paints http://www.iciduluxpaints.com Pro painters http://www.devoecoatings.com IM coatings http://www.duspec.com MSDS & PDS http://www.glidden.com Retail for homeowners http://www.ici.com Corporate	PSU, F, NFS, NFE, NFSG**	YES	YES	440-826-5519
Kryton http://www.kryton.com	WPS	YES	YES	
Miller Paint http://www.millerpaint.com	PSU, F, NFE, NFS	YES	NO	503-407-2532
Monopole Inc. http://www.monopoleinc.com	IM, WPS, WPC/MS	YES	YES	818-500-8585
Polibrid Coatings http://www.polibrid.com	F, NF, PSU	YES	YES	956-831-7818
Richards Paints http://www.richardspaint.com/	F, NFR, NFS	YES	NO	800-432-0983
Rodda Paints http://www.roddapaint.com/	PSU, F, NFE, NFS	YES	NO	503-737-6031 x6051
Sampson Coatings, Inc. http://www.sampsoncoatings.com	PSU, F, NF	YES	YES	804-359-5011
Samuel Cabot, Inc http://www.cabotstain.com	WPS	NO	YES	800-877-8246
Seal-Krete Inc. http://www.seal-krete.com	PSU, F	YES	YES	800-323-7357 x541
Sierra Performance by Rust-Oleum http://www.rustoleum.com	PSU, F, NF	YES	YES	800-553-8444
Silvertown Products http://www.rhinoguard.com	S, CWF	NO	YES	909-986-7061
Spectra-Tone Paint http://www.spectra-tone.com/	F, NFE, NFSG	YES	NO	800-272-4687
Tried & True Wood Finishes http://www.triedandtruewoodfinish.com	CWF	YES	NO	607-387-9280
VOC Free No Website	FLOOR SEALER, PSU, F, NF	YES	YES	201-457-1221

Super-Compliant Architectural Coating Manufacturers*

The following companies have informed the SCAQMD that they manufacture one or more Super-Compliant Architectural/Industrial (AIM) Coatings

INDUSTRIAL MAINTENANCE COATINGS

Industrial Maintenance Coatings				
Manufacturer	**Type of Coatings**	**Interior**	**Exterior**	**Phone Number**
Ameron, Intl. http://www.ameroncoatings.com/welcome.cfm	VARIOUS SYSTEMS	YES	YES	800-926-3766
Duromar http://www.duromar.com/	VARIOUS SYSTEMS	YES	YES	781-749-6992
JFB Hart Polymers http://www.jfbhartcoatings.com/	VARIOUS SYSTEMS	YES	YES	630-574-1729
Novocoat (Formerly) Superior Environmental Products, Inc http://www.novocoat.com	VARIOUS SYSTEMS	YES	YES	972-490-0566
Pacific Polymer http://www.pacpoly.com/	VARIOUS SYSTEMS	YES	YES	800-888-8340
Specialty Products Inc. http://www.specialty-products.com	VARIOUS SYSTEMS	YES	YES	253- 983-7530
United Coatings http://www.unitedcoatings.com/	VARIOUS SYSTEMS	YES	YES	800-541-4383

CWF	Clear Wood Finish
F	Flats
NF	Nonflat
NFS	Nonflat - satin
NFE	Nonflat - eggshell
NFSG	Nonflat - semi-gloss
PSU	Primers, sealers, and undercoaters
S	Stains
WPS	Waterproofing Sealer
WPCMS	Waterproofing Concrete/Masonry Sealers

** Super-compliant coatings are defined as those coatings that have a VOC content less than the VOC content limits set forth for the current and/or future limits in the Table of Standards found in paragraph (c)(2)of Rule 1113 and specify a VOC content less than 10 g/l VOC.*

** Not available for exterior use

This is not an all-inclusive list of super-compliant coatings available from manufacturers/suppliers who have informed SCAQMD that they can provide the super-compliant products listed.

The SCAQMD in no way endorses any of these companies nor does it certify their ability to meet the requirements of Rule 1113 Architectural Coatings. If you want your company included in this page, please send your request to dhopps@aqmd.gov or call Don Hopps at (909) 396-2334.

APPENDIX F

Rule 403 Regulatory Requirements

Table 1
Fugitive Dust Best Available Control Measure
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	• 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.
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	• Maintain live perennial vegetation where possible. • Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	• Use of high-pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	• Follow permit conditions for crushing equipment. • Prewater material prior to loading into crusher. • Monitor crusher emissions opacity. • Apply water to crushed material to prevent dust plumes
Cut and fill	05-1 Prewater soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	• For large site, prewater with sprinklers or water trucks and allow time for penetration. • Use water trucks/pull to water soils to depth of cut prior to subsequent cuts.

Demolition—mechanical/ manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 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.	• Apply water in sufficient quantities to prevent the generation of visible dust plumes.
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures.	• Limit vehicular traffic and disturbances on soils where possible. • 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 Preapply water to depth of proposed cuts; and 08-2 Reapply 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 08-3 Stabilize soils once earth moving activities are complete	• Grade each project phase separately, times to coincide with construction phase. • 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.
Importing/ exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	• Use tarps or other suitable enclosures on haul trucks. • Check belly-dump truck seals regularly and remove and trapped rocks to prevent spillage. • Comply with track-out prevention/ Mitigation requirements. • Provide water while loading and unloading to reduce visible dust plumes.

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 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	• Installation of curbing and/or paving road shoulders can reduce recurring maintenance costs. • Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.
Screening	12-1 Prewater material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plum length standards; and 12-3 Stabilize material immediately after screening.	• 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.
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	• Limit size of staging area. • Limit vehicle speeds of 15 miles per hour • Limit number and size of staging area entrances/exits.
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 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.	• Add or remove material from the downwind portion of the storage pile. • Maintain storage piles to avoid steep sides or faces.

Traffic Areas for Contruction	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	• 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.
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	• 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.
Truck loading	17-1 Prewater material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114).	• Empty loader bucket such that no visible dust plumes are created. • Ensure that the loader bucket is closer to the truck to minimize drop height while loading.
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plum length standards; and 18-2 Cover haul vehicles prior to exiting the site.	• Haul waste material immediately off site.
Unpaved roads/ parking lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	• Restricting vehicular access to established unpaved travel path and parking lots can reduce stabilization requirements.
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 vehicles 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 2
Dust Control Measures for Large Operations

Fugitive Dust Source Category	Control Actions
Earth-moving (except construction cutting and filling area, and mining operations)	1a Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or equivalent method approved by the Executive Officer, CARB, and the USEPA. Two soil moisture evaluations must be conducted during the first three hours or 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 D-2216, 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; 2d Take actions (3a) or (3c) specified for inactive disturbed surface areas.

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 USEPA as equivalent to the methods specified in this Table may be used.

Table 3
Contingency Control Measures for Large Operations

Fugitive Dust Source Category	Control Measures
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 this Table, 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 USEPA as equivalent to the methods specified in this Table may be used.

APPENDIX G

2007 AQMP Health Effects Summary

FINAL 2007 AQMP
APPENDIX I

HEALTH EFFECTS

JUNE 2007

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HEALTH EFFECTS

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Sulfates
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INTRODUCTION

This document presents a summary of scientific findings on the health effects of ambient air pollutants. The California Health and Safety Code Section 40471(b) requires that the South Coast Air Quality Management District prepare a report on the health impacts of particulate matter in the South Coast Air Basin, in conjunction with the preparation of the Air Quality Management Plan revisions. This document, which was prepared to satisfy that requirement, also includes the effects of the other major pollutants.

HEALTH EFFECTS OF AIR POLLUTION

Ambient air pollution is a major public health concern. Excess deaths and increases in illnesses associated with high air pollution levels have been documented in several episodes as early as 1930 in Meuse Valley, Belgium; 1948 in Donora, Pennsylvania; and 1952 in London. Although levels of pollutants that occurred during these acute episodes are now unlikely in the United States, ambient air pollution continues to be linked to increases in respiratory illness (morbidity) and increases in death rates (mortality).

The adverse health effects associated with air pollution are diverse and include:

- Increased mortality
- Increased health care utilization (hospitalization, physician and emergency room visits)
- Increased respiratory illness (symptoms, infections, and asthma exacerbation)
- Decreased lung function (breathing capacity)
- Lung inflammation
- Potential immunological changes
- Increased airway reactivity to a known chemical exposure - a method used in laboratories to evaluate the tendency of airways to have an increased possibility of developing an asthmatic response
- A decreased tolerance for exercise.

The evidence linking these effects to air pollutants is derived from population-based observational and field studies (epidemiological) as well as controlled laboratory studies involving human subjects and animals. There have been an increasing number of studies focusing on the mechanisms (that is, on learning how specific organs, cell types, and biochemicals are involved in the human body's response to air pollution) and specific pollutants responsible for individual effects. Yet the underlying biological pathways for these effects are not always clearly understood.

Although individuals inhale pollutants as a mixture under ambient conditions, the regulatory framework and the control measures developed are mostly pollutant-specific. This is appropriate, in that different pollutants usually differ in their sources, their times and places of occurrence, the kinds of health effects they may cause, and their overall levels of health risk. Different pollutants, from the same or different sources, may sometimes act together to harm health more than they would acting separately. Nevertheless, as a practical matter, health scientists, as well as regulatory officials, usually must deal with one pollutant at a time in determining health effects and in adopting air quality standards. To meet the air quality standards, comprehensive plans are developed such as the Air Quality Management Plan (AQMP) and the Air Toxics Control Plan (ATCP). These plans examine multiple pollutants, cumulative impacts, and transport issues related to attaining healthful air quality. A brief overview of the effects observed and attributed to various air pollutants is presented in this document.

This summary is drawn substantially from reviews presented previously (SCAQMD, 1996 and 2003), and from reviews on the effects of air pollution by the American Thoracic Society (ATS, 1996), the U.S. EPA reviews for ozone (U.S. EPA, 2006), Carbon Monoxide (U.S. EPA, 2000), and Particulate Matter (U.S. EPA, 2004), from a published review of the health effects of air pollution (Brunekreef and Holgate, 2002), and from reviews prepared by the California EPA Office of the Environmental Health Hazard Assessment for Particulate Matter (Cal EPA, 2002) and for Ozone (Cal EPA, 2005) . More detailed citations and discussions on air pollution health effects can be found in these references.[1]

OZONE

Ozone is a highly reactive compound, and is a strong oxidizing agent. When ozone comes into contact with the respiratory tract, it can react with tissues and cause damage in the airways. Since it is a gas, it can penetrate into the gas exchange region of the deep lung.

The EPA primary standard for ozone is 0.08 ppm averaged over eight hours. The California Air Resources Board (CARB) has established standards of 0.09 ppm averaged over one hour and at 0.070 ppm averaged over eight hours.

The major subgroups of the population considered to be at increased risk from ozone exposure are outdoor exercising individuals including children and people with preexisting respiratory disease(s) such as asthma. The data base identifying the former

[1] Most of the studies referred to in this appendix are cited in the above sources. Only more recent specific references will be cited in this summary.

group as being at increased risk to ozone exposure is much stronger and more quantitative than that for the latter group, probably because of a larger number of studies conducted with healthy individuals. The adverse effects reported with short-term ozone exposure are greater with increased activity because activity increases the breathing rate and the volume of air reaching the lungs, resulting in an increased amount of ozone reaching the lungs. Children may be a particularly vulnerable population to air pollution effects because they spend more time outdoors, are generally more active, and have a higher ventilation rate than adults.

A number of adverse health effects associated with ambient ozone levels have been identified from laboratory and epidemiological studies (EPA, 1996; ATS, 1996). These include increased respiratory symptoms, damage to cells of the respiratory tract, decreases in lung function, increased susceptibility to respiratory infection, and increased risk of hospitalization.

The Children's Health Study, conducted by researchers at the University of Southern California, followed a cohort of children that live in 12 communities in southern California with differing levels of air pollution for several years. A publication from this study found that school absences in fourth graders for respiratory illnesses were associated with ambient ozone levels. An increase of 20 ppb ozone was associated with an 83% increase in illness related absence rates (Gilliland, 2001).

The number of hospital admissions and emergency room visits for all respiratory causes (infections, respiratory failure, chronic bronchitis, etc.) including asthma show a consistent increase as ambient ozone levels increase in a community. These excess hospital admissions and emergency room visits are observed when hourly ozone concentrations are as low as 0.08 to 0.10 ppm.

Numerous recent studies have found positive associations between increases in ozone levels and excess risk of mortality. These associations persist even when other variables including season and levels of particulate matter are accounted for. This indicates that ozone mortality effects are independent of other pollutants (Bell, 2004).

Several population-based studies suggest that asthmatics are more adversely affected by ambient ozone levels, as evidenced by increased hospitalizations and emergency room visits. Laboratory studies have attempted to compare the degree of lung function change seen in age and gender-matched healthy individuals versus asthmatics and those with chronic obstructive pulmonary disease. While the degree of change evidenced did not differ significantly, that finding may not accurately reflect the true impact of exposure on these respiration-compromised individuals. Since the respiration-compromised group may have lower lung function to begin with, the same degree of change may represent a substantially greater adverse effect overall.

A recent publication from the Children's Health Study focused on children and outdoor exercise. In communities with high ozone concentrations, the relative risk of developing asthma in children playing three or more sports was found to be over three times higher than in children playing no sports (McConnell, 2002). These findings indicate that new cases of asthma in children are associated with heavy exercise in communities with high levels of ozone. While it has long been known that air pollution can exacerbate symptoms in individuals with respiratory disease, this is among the first studies that indicate ozone exposure may be causally linked to asthma.

In addition, human and animal studies involving both short-term (few hours) and long-term (months to years) exposures indicate a wide range of effects induced or associated with ambient ozone exposure. These are summarized in Table 1.

Some lung function responses (volume and airway resistance changes) observed after a single exposure to ozone exhibit attenuation or a reduction in magnitude with repeated exposures. Although it has been argued that the observed shift in response is evidence of a probable adaptation phenomenon, it appears that while functional changes may exhibit adaptation, biochemical and cellular changes which may be associated with episodic and chronic exposure effects may not exhibit similar adaptation. That is, internal damage to the respiratory system may continue with repeated ozone exposures, even if externally observable effects (chest symptoms and reduced lung function) disappear.

In a laboratory, exposure of human subjects to low levels of ozone causes reversible decrease in lung function as assessed by various measures such as respiratory volumes, airway resistance and reactivity, irritative cough and chest discomfort. Lung function changes have been observed with ozone exposure as low as 0.08 to 0.12 ppm for 6-8 hours under moderate exercising conditions. Similar lung volume changes have also been observed in adults and children under ambient exposure conditions (0.10 - 0.15 ppm). The responses reported are indicative of decreased breathing capacity and are reversible.

In laboratory studies, cellular and biochemical changes associated with respiratory tract inflammation have also been consistently reported in the airway lining after low level exposure to ozone. These changes include an increase in specific cell types and in the concentration of biochemical mediators of inflammation and injury such as cytokines and fibronectin. These inflammatory changes can be observed in healthy adults exposed to ozone in the range of 0.08 to 0.10 ppm.

The susceptibility to ozone observed under ambient conditions could be due to the combination of pollutants that coexist in the atmosphere or ozone may actually sensitize these subgroups to the effects of other pollutants.

Some animal studies show results that indicate possible chronic effects including functional and structural changes of the lung. These changes indicate that repeated inflammation associated with ozone exposure over a lifetime may result in sufficient damage to respiratory tissue such that individuals later in life may experience a reduced quality of life in terms of respiratory function and activity level achievable. An autopsy study involving Los Angeles County residents provided supportive evidence of lung tissue damage (structural changes) attributable to air pollution.

A recent study of birth outcomes in southern California found an increased risk for birth defects in the aortic and pulmonary arteries associated with ozone exposure in the second month of pregnancy (Ritz et al., 2002). This is the first study linking ambient air pollutants to birth defects in humans. Confirmation by further studies is needed.

TABLE 1

Adverse Health Effects of Ozone (O_3)
(Summary of Key Studies)

0_3 Concentration and Exposure Hr, ppm	Health Effect
Ambient air containing 0.10 - 0.15 daily 1-h max over days to weeks	Decreased breathing capacity, in children, adolescents, and adults exposed to 0_3 outdoors Exacerbation of respiratory symptoms (e.g., cough, chest pain) in individuals with preexisting disease (e.g., asthma) with low ambient exposure, decreased temperature, and other environmental factors resulting in increased summertime hospital admissions and emergency department visits for respiratory causes
≥0.12 (1-3h) ≥0.08 (6.6h) (chamber exposures)	Decrements in lung function (reduced ability to take a deep breath), increased respiratory symptoms (cough, shortness of breath, pain upon deep inspiration), increased airway responsiveness and increased airway inflammation in exercising adults Effects are similar in individuals with preexisting disease except for a greater increase in airway responsiveness for asthmatic and allergic subjects Older subjects (>50 yrs old) have smaller and less reproducible changes in lung function Attenuation of response with repeated exposure
≥0.12 with prolonged, repeated exposure (chamber exposures)	Changes in lung structure, function, elasticity, and biochemistry in laboratory animals that are indicative of airway irritation and inflammation with possible development of chronic lung disease Increased susceptibility to bacterial respiratory infections in laboratory animals

From: SCAQMD, 1996

In summary, acute adverse effects associated with ozone exposures have been well documented, although the specific causal mechanism is still somewhat unclear. Additional research efforts are required to evaluate the long-term effects of air pollution and to determine the role of ozone in influencing chronic effects.

PARTICULATE MATTER

Airborne particulates are a complex group of pollutants that vary in source, size and composition, depending on location and time. The components include nitrates, sulfates, elemental carbon, organic carbon compounds, acid aerosols, trace metals, and material from the earth's crust. Substances of biological origin, such as pollen and spores, may also be present.

Until several years ago, the health effects of particulates were focused on those sized 10 m (micrometers) aerodynamic diameter and smaller. These can be inhaled through the upper airways and deposited in the lower airways and gas exchange tissues in the lung. These particles are referred to as PM10. EPA initially promulgated ambient air quality standards for PM10 of 150 g/m^3 averaged over a 24-hour period, and 50 g/m^3 for an annual average. EPA has very recently rescinded the annual PM10 standard, but kept the 24-hour standard.

In recent years additional focus has been placed on particles having an aerodynamic diameter of 2.5 m or less (PM2.5). A greater faction of particles in this size range can penetrate and deposit deep in the lungs. The EPA recently lowered the air quality standards for PM2.5 to 35 g/m^3 for a 24-hour average and reaffirmed 15 g/m^3 for an annual average standard. There was considerable controversy and debate surrounding the review of particulate matter health effects and the consideration of ambient air quality standards (Kaiser, 1997; Vedal, 1997) when the EPA promulgated the initial PM2.5 standards in 1997.

Since that time, numerous studies have been published and some of the key studies were closely scrutinized and analyses repeated. The result is that there are now substantial data confirming the adverse health effects of PM2.5 exposures.

There are also differences in the composition and sources of particles in the different size ranges that may have implications for health effects. The particles larger than 2.5 m (often referred to as the coarse fraction) are mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and resuspension of particles from the ground or road surfaces by wind and human activities.

In contrast, particles smaller than 2.5 m are mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary combustion sources. The particles are either directly emitted or are formed in the atmosphere from gases that are emitted. Components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

Attention to another range of very small particles has been increasing over the last few years. These are generally referred to as "ultrafine" particles, with diameters of 0.1 μm or less. These particles are mainly from fresh emissions of combustion sources, but are also formed in the atmosphere from photochemical reactions. Ultrafine particles have relatively short half lives (minutes to hours) and rapidly grow through condensation and coagulation process into larger particles within the PM2.5 size range. These particles are garnering interest since laboratory studies indicate that their toxicity may be higher on a mass basis than larger particles, and there is evidence that these small particles can translocate from the lung to the blood and to other organs of the body.

The health effects of ambient particulate matter have been recently reviewed (ATS, 1996; U.S. EPA, 2004, Brunekreef, 2002). In addition, the California Air Resources Board (CARB) and the Office of Environmental Health and Hazard Assessment (OEHHA) have reviewed the adequacy of the California Air Quality Standards for Particulate Matter (Cal EPA, 2002).

The major types of effects associated with particulate matter include:

- Increased mortality
- Exacerbation of respiratory disease and of cardiovascular disease as evidenced by increases in:

    -Respiratory symptoms

    -Hospital admissions and emergency room visits

    -Physician office visits

    -School absences

    -Work loss days

- Effects on lung function
- Changes in lung morphology

The U.S. EPA has recently lowered the short-term ambient air quality standard for fine particles (PM2.5) and has rescinded the annual standard for PM10. The current federal and California standards are listed below:

Standard	Federal	California
PM10 24-Hour average	150 μg/m^3	50 μg/m^3
PM10 Annual Average	--	20 μg/m^3
PM 2.5 24-Hour Average	35 μg/m^3	--
PM 2.5 Annual Average	15 μg/m^3	12 μg/m^3

Short-Term Exposure Effects

Epidemiological studies have provided continued and consistent evidence for most of the effects listed above. An association between increased daily or several-day-average concentrations of PM10 and excess mortality and morbidity is consistently reported from studies involving communities across the U.S. as well as in Europe, Asia, and South America. A review and analysis of epidemiological literature for acute adverse effects was undertaken by Dockery and Pope to estimate these effects as percent increase in mortality associated with each incremental increase of PM10 by 10 μg/m^3. The estimates are presented in Table 2. It appears that individuals who are elderly or have preexistent lung or heart disease are more susceptible than others to the adverse effects of PM10.

TABLE 2

Combined Effect Estimates of Daily Mean
Particulate Pollution

	% Change in Health Indicator per each 10 $\mu g/m^3$ Increase in PM10
Increase in daily mortality	
Total deaths	1.0
Respiratory deaths	3.4
Cardiovascular deaths	1.4
Increase in hospital usage (all respiratory diagnoses)	
Admissions	1.4
Emergency department visits	0.9
Exacerbation of asthma	
Asthmatic attacks	3.0
Bronchodilator use	12.2
Emergency department visits*	3.4
Hospital admissions	1.9
Increase in respiratory symptom reports	
Lower respiratory	3.0
Upper respiratory	0.7
Cough	2.5
Decrease in lung function	
Forced expiratory volume	0.15
Peak expiratory flow	0.08

* One study only

(Source: American Journal of Respiratory and Critical Care Medicine, Vol. 153, 113-50, 1996)

Many recent studies have confirmed that excess mortality and morbidity are associated with particulate matter levels. Estimates of mortality effects from these studies range from 0.3 to 1.7% increase for a 10 g/m^3 increase in PM10 levels. The National Morbidity, Mortality, and Air Pollution Study (NMMAPS), a recent study of the largest U.S. cities, determined a combined risk estimate of about a 0.5% increase in total mortality for a 10 g/m^3 increase in PM10 (Samet, 2000a). This study also analyzed the effects of gaseous co-pollutants. The results indicated that the association of PM10 and mortality were not confounded by the presence of the gaseous pollutants. When the gaseous pollutants were included in the analyses, the significance of the PM10 estimates remained. The PM10 effects were reduced somewhat when O_3 was also considered and tended to be variably decreased when NO_2, CO, and SO_2 were added to the analysis. These results argue that the effects are likely due to the particulate exposures; they cannot readily be explained by coexisting weather stresses or other pollutants.

The NMMAPS study (Samet 2000b) was one that used a flawed statistical software package. The investigators have reanalyzed their data using corrected settings for the software (Dominici, 2002a, Dominici 2002b). When the estimates for the 90 cities in the study were recalculated, the estimate changed from 0.41 percent increase in mortality for a 10 g/m^3 increase in PM10 to a 0.27 percent increase. There remained a strong positive association between acute exposure to PM10 and mortality. Thus while the quantitative estimate is reduced, the major findings of the study did not change.

Studies of PM2.5 also find associations with elevated mortality. The estimates for PM2.5 generally are in the range of 2.0 to 8.5% increase in total deaths per 25 g/m^3 increase in 24-hour PM2.5 levels. The estimates for cardiovascular related mortality range from 3.0 to 7.0% per 25 g/m^3 24-hour PM2.5, and for respiratory mortality estimates range from 2.0 to 7.0% per 25 g/m^3 24-hour PM2.5.

Several studies have attempted to assess the relative importance of particles smaller than 2.5 m and those between 2.5 m and 10 m (PM10-2.5). While some studies report that PM2.5 levels are better predictors of mortality effects, others suggest that PM10-2.5 is also important. Most of the studies found higher mortality associated with PM2.5 levels than with PM10-2.5. For example, a study of six cities in the U.S. found that particulate matter less than 2.5 m were associated with increased mortality, but that the larger particles were not. Other studies in Mexico City and Santiago, Chile reported that PM10-2.5 was as important as PM2.5. Overall effects estimates for PM10-2.5 fall in the range of 0.5 to 6.0 % excess mortality per 25 g/m^3 24-hour average.

The relative importance of both PM2.5 and PM10-2.5 may vary in different regions depending on the relative concentrations and components, which can also vary by season. More research is needed to better assess the relative effects of fine (PM2.5) and coarse (PM10-2.5) fractions of particulate matter on mortality.

A number of studies have evaluated the association between particulate matter exposure and indices of morbidity such as hospital admissions, emergency room visits or physician office visits for respiratory and cardiovascular diseases. The effects estimates are generally higher than the effects for mortality. The effects are associated with measures of PM10 and PM2.5. Effects are also associated with PM10-2.5. Thus, it appears that when a relatively small number of people experience severe effects, larger numbers experience milder effects, which may relate either to the coarse or to the fine fraction of airborne particulate matter.

In the NMMAPS study, hospital admissions for those 65 years or older were assessed in 14 cities. Hospital admissions for these individuals showed an increase of 6% for cardiovascular diseases and a 10% increase for respiratory disease admissions, per 50 g/m^3 increase in PM10. The excess risk for cardiovascular disease ranges from 3-10% per 50 g/m^3 PM10 and from 4-10% per 25 g/m^3 PM2.5 or PM10-2.5.

Similarly, school absences, lost workdays and restricted activity days have also been used in some studies as indirect indicators of acute respiratory conditions. The results are suggestive of both immediate and delayed impact on these parameters following elevated particulate matter exposures. These observations are consistent with the hypothesis that increased susceptibility to infection follows particulate matter exposures.

Some studies have reported that short-term particulate matter exposure is associated with changes in lung function (lung capacity and breathing volume); upper respiratory symptoms (hoarseness and sore throat); and lower respiratory symptoms (increased sputum, chest pain and wheeze). The severity of these effects is widely varied and is dependent on the population studied, such as adults or children with and without asthma. Sensitive individuals, such as those with asthma or pre-existing respiratory disease, may have increased or aggravated symptoms associated with short-term particulate matter exposures. Several studies have followed the number of medical visits associated with pollutant exposures. A range of increases from 3% to 42% for medical visits for respiratory illnesses was found corresponding to a 50 g/m^3 change in PM10. A limited number of studies also looked at levels of PM2.5 or PM10-2.5. The findings suggest that both the fine and coarse fractions may have associations with some respiratory symptoms.

The biological mechanisms by which particulate matter can produce health effects are being investigated in laboratory studies. Inflammatory responses in the respiratory system in humans and animals exposed to concentrated ambient particles have been measured. These include effects such as increases in neutrophils in the lungs. Other changes reported include increased release of cytokines and interleukins, chemicals released as part of the inflammatory process. The effects of particulate matter may be mediated in part through the production of reactive oxygen species during the inflammatory process. Recent reviews discuss mechanistic studies in more detail (Brunekreef, 2002; Brook, 2004).

Long-Term Exposure Effects

While most studies have evaluated the acute effects, some studies specifically focused on evaluating the effects of chronic exposure to PM10 and PM2.5. Studies have analyzed the mortality of adults living in different U.S. cities. After adjusting for important risk factors, these studies found a consistent positive association of deaths and exposure to particulate matter. A similar association was observable in both total number of deaths and deaths due to cardiorespiratory causes. A shortening of lifespan was also reported in these studies.

Significant associations for PM2.5 for both total mortality and cardiorespiratory mortality were reported in a study using data from the American Cancer Society. A re-analysis of the data from this study confirmed the finding (Krewski, 2000). The Harvard Six Cities Study evaluated several size ranges of particulate matter and reported significant associations with PM15, PM2.5, sulfates, and non-sulfate particles, but not with coarse particles (PM15 – PM2.5). An extension of the Harvard Six Cities Cohort confirmed the association of mortality with PM2.5 levels (Laden, 2006). These studies provide evidence that the fine particles, as measured by PM2.5, may be more strongly associated with mortality effects from long-term particulate matter exposures than are coarse compounds.

A follow-up study of the American Cancer Society cohort confirmed and extended the findings in the initial study. The researchers estimated that, on average, a 10ug/m3 increase in fine particulates was associated with approximately a 4% increase in total mortality, a 6% increase in cardiopulmonary mortality, and an 8% increase risk of lung cancer mortality (Pope, 2002). The magnitude of effects is larger in the long-term studies than in the short-term investigations. An analysis of the American Cancer Society Cohort from the Los Angeles area used a more detailed estimate of long-term PM2.5 exposures and found that the risk of mortality was up to three times higher than estimated with the national cohort (Jerrett, 2005). These findings indicate that long-term exposures may be more important in terms of overall health effects.

Recent studies report evidence indicating that particulate matter exposure early in pregnancy may be associated with lowered birth weights (Bobak, 1999). Other studies from the U.S., the Czech Republic and Mexico City have reported that neonatal and early postnatal exposure to particulate matter may lead to increased infant mortality. A more recent study in Southern California found increased risks for infant deaths associated with exposures to particulates and other pollutants (Ritz, 2006). These results suggest that infants may be a subgroup affected by particulate matter exposures.

In addition, some long-term effect studies have reported an increased risk of mortality from lung cancer associated with particulate matter exposures. A study involving California Seventh Day Adventists (very few of whom smoke) has reported an association of lung cancer mortality with PM10 levels. It is not clear from these studies whether the association relates to causation of disease, or whether individuals with cancer are more susceptible to other effects of particles leading to the observed mortality association. A recent study that followed a large number of individuals living in the largest U.S. cities found elevated lung cancer risk associated with long term average PM2.5 levels (Pope, 2002).

Several studies have assessed the effects of long-term particulate matter exposure on respiratory symptoms and lung function changes. Associations have been found with symptoms of chronic bronchitis and decreased lung function. A study of school children in 12 communities in Southern California showed significant association of particulate matter with bronchitis or phlegm in children with asthma. These effects were also associated with NO_2 and acid vapor levels.

A cohort of fourth graders from the Southern California communities was followed over a period of four years by the Children's Health Study. A lower rate of growth in lung function was found in children living in areas with higher levels of particulate pollution (Gauderman, 2000). Decreases in lung function growth were associated with PM10, PM2.5, PM10-2.5, acid vapor, and NO_2. There was no association with ozone levels. The investigators were not able to identify independent effects of the pollutants, but noted that motor vehicle emissions are a major source of the pollutants.

A follow-up study on a second cohort of children confirmed the findings that decreased lung function growth was associated with particulates, nitric oxides, and elemental carbon levels (Gauderman, 2002). Elemental carbon is often used as a measure for diesel particulate. Additionally, children who moved to areas with less air pollution were found to regain some of the lung function growth rate (Avol, 2001). By the time the fourth graders graduated from high school, a significant number showed lower lung function. The risk of lower lung function was about five times higher in children with the highest PM2.5 exposure when compared to the lowest exposure communities (Gauderman, 2004). These deficits are likely to persist since the children were at the end of their growth period.

Despite data gaps, the extensive body of epidemiological studies has both qualitative and quantitative consistency suggestive of causality. A considerable body of evidence from these studies suggests that ambient particulate matter, alone or in combination with other coexisting pollutants, is associated with significant increases in mortality and morbidity in a community.

In summary, the scientific literature indicates that an increased risk of mortality and morbidity is associated with particulate matter at ambient levels. The evidence for particulate matter effects is mostly derived from population studies with supportive evidence from clinical and animal studies. Although most of the effects are attributable to particulate matter, co-pollutant effects cannot be ruled out on the basis of existing studies. The difficulty of separating the effects may be due to the fact that particulate levels co-vary with other combustion source pollutants. That is, the particle measurements serve as an index of overall exposure to combustion-related pollution, and some component(s) of combustion pollution other than particles might be at least partly responsible for the observed health effects.

ULTRAFINE PARTICLES

As noted above, numerous studies have found association of particulate matter levels with adverse effects, including mortality, hospital admissions, and respiratory disease symptoms. The vast majority of these studies used particle mass of PM10 or PM2.5 as the measure of exposure. Some researchers have postulated, however, that ultrafine particles may be responsible for some of the observed associations of particulate matter and health outcomes (Oberdorster, et al, 1995; Seaton, et al, 1995). Ultrafine particles are generally classified of 0.1 µm and small diameter.

Several potential mechanisms have been brought forward to suggest that the ultrafine portion may be important in determining the toxicity of ambient particulates, some of which are discussed below.

For a given mass concentration, ultrafine particles have much higher numbers and surface area compared to larger particles. Particles can act as carriers for other adsorbed agents, such as trace metals and organic compounds; and the larger surface area may transport more of such toxic agents than larger particles.

Smaller particles can also be inhaled deep into the lungs. As much as 50% of 0.02 µm diameter particles are estimated to be deposited in the alveolar region of the lung.

CARBON MONOXIDE

The high affinity of carbon monoxide (CO) to bond with oxygen-carrying proteins (hemoglobin and myoglobin) results in reduced oxygen supply in the bloodstream of exposed individuals. The reduced oxygen supply is responsible for the toxic effects of CO which are typically manifested in the oxygen-sensitive organ systems. The effects have been studied in controlled laboratory environments involving exposure of humans and animals to CO, as well as in population-based studies of ambient CO exposure effects. People with deficient blood supply to the heart (ischemic heart disease) are known to be susceptible to the effects of CO. Protection of this group is the basis of the existing National Ambient Air Quality Standards for CO at 35 ppm for one hour and 9 ppm averaged over eight hours. The health effects of ambient CO have been recently reviewed (U.S. EPA, 2000).

Inhaled CO has no known direct toxic effect on lungs but rather exerts its effects by interfering with oxygen transport through the formation of carboxyhemoglobin (COHb, a chemical complex of CO and hemoglobin). Exposure to CO is often evaluated in terms of COHb levels in blood measured as percentage of total hemoglobin bound to CO. COHb levels in non-smokers range between 0.3 and 0.7% and 5 to 10% in smokers. COHb levels in excess of 1.5% in a significant proportion of urban nonsmoking populations can be considered as evidence of widespread exposure to environmental CO.

Under controlled laboratory conditions, healthy subjects exposed to CO sufficient to result in 5% COHb levels exhibited reduced duration of maximal exercise performance and consumption of oxygen. Studies involving subjects with coronary artery disease who engaged in exercise during CO exposures have shown that COHb levels as low as 2.4% can lead to earlier onset of electrocardiograph changes indicative of deficiency of oxygen supply to the heart. Other effects include an earlier onset of chest pain, an increase in the duration of chest pain, and a decrease in oxygen consumption.

Animal studies associated with long-term exposure to CO resulting in COHb levels that are equivalent to those observed in smokers have shown indication of reduction in birth weight and impaired neurobehavior in the offspring of exposed animals.

Recent epidemiological studies conducted in Southern California have indicated an association with CO exposure during pregnancy to increases in pre-term births. (Ritz, 2000). However, the results were not consistent in different areas studied. The increase in the pre-term births was also associated with PM10 levels. Another study found increased risks for cardiac related birth defects with carbon monoxide exposure in the second month of pregnancy (Ritz, 2002). Further study is needed to confirm these observations.

NITROGEN DIOXIDE

The California EPA is currently reviewing the health effects of nitrogen dioxide (Cal EPA, 2006). Evidence for low-level nitrogen dioxide ($NO_{2)}$ exposure effects is derived from laboratory studies of asthmatics and from epidemiological studies. Additional supportive evidence is derived from animal studies.

Epidemiological studies using the presence of an unvented gas stove as a surrogate for indoor NO_2 exposures suggest an increased incidence of respiratory infections or symptoms in children.

Recent studies related to outdoor exposure have found health effects associated with ambient NO_2 levels, including respiratory symptoms, respiratory illness, decreased lung function, increased emergency room visits for asthma, and cardiopulmonary mortality. However, since NO_2 exposure generally occurs in the presence of other pollutants, such as particulate matter, these studies are often unable to determine the specific role of NO_2 in causing effects.

The Children's Health Study in Southern California found associations of air pollution, including NO_2, PM10, and PM2.5, with respiratory symptoms in asthmatics (McConnell, 1999). Particles and NO_2 were correlated, and effects of individual pollutants could not be discerned. A subsequent analysis indicated a stronger role for NO2 (McConnell, 2002).

Ambient levels of NO_2 were also associated with a decrease in lung function growth in a group of children followed for eight years. In addition to NO_2, the decreased growth was also associated with particulate matter and airborne acids. The study authors postulated that these may be a measure of a package of pollutants from traffic sources. (Gauderman, 2004).

Results from controlled exposure studies of asthmatics demonstrate an increase in the tendency of airways to contract in response to a chemical stimulus (bronchial reactivity). Effects were observed with an exposure to 0.3 ppm NO_2 for a period ranging from 30 minutes to 3 hours. A similar response is reported in some studies with healthy subjects at higher levels of exposure (1.5 - 2.0 ppm). Mixed results have been reported when people with chronic obstructive lung disease are exposed to low levels of NO_2.

Short-term controlled studies of animals exposed to NO_2 over a period of several hours indicate cellular changes associated with allergic and inflammatory response and interference with detoxification processes in the liver. In some animal studies the severity of the lung structural damage observed after relatively high levels of short-term ozone exposure is observed to increase when animals are exposed to a combination of ozone and NO_2.

In animals, longer-term (3-6 months) repeated exposures at 0.25 ppm appear to decrease one of the essential cell-types (T-cells) of the immune system. Non-specific changes in cells involved in maintaining immune functions (cytotoxic T cells and natural killer cells) have been observed in humans after repeated exposure (4-6 days) to >0.6 ppm of NO_2 (20 min. - 2 hours). All these changes collectively support the observation reported both in population and animal studies of increased susceptibility to infections, as a result of NO_2 exposure.

SULFUR DIOXIDE

Controlled laboratory studies involving human volunteers have clearly identified asthmatics as the most sensitive group to the effects of ambient sulfur dioxide ($SO_{2)}$ exposures. Healthy subjects have failed to demonstrate any short-term respiratory functional changes at exposure levels up to 1.0 ppm over 1-3 hours.

In asthmatics, brief exposure (10 minutes) to SO_2 at levels as low as 0.25 ppm can result in significant alteration of lung function, such as increases in airway resistance and decreases in breathing capacity. In some, the exposure can result in severe symptoms necessitating the use of medication for relief. The response to SO_2 inhalation is observable within 2 minutes of exposure, increases further with continuing exposure up to 5 minutes then remains relatively steady as exposure continues. SO_2 exposure is generally not associated with any delayed reactions or repetitive asthmatic attacks.

No significant changes have been reported from studies, which have evaluated the effects of exposure to co-pollutants (ozone or nitrogen dioxide), prior to or in conjunction with SO_2 exposure.

Animal studies have shown that despite SO_2 being a respiratory irritant, it does not cause substantial acute or chronic toxicity in animals exposed at ambient concentrations. However, relatively high exposures (10 ppm of SO_2 for 72 hours) in mice can lead to tissue damage, fluid accumulation and sloughing of respiratory lining. Sensitization to allergies is observable in guinea pigs repeatedly exposed to high levels (72 ppm) of SO_2. This effect needs further evaluation in clinical and population studies to identify any chronic exposure impact on both asthmatic incidence and attacks in a population.

Some epidemiological studies indicate that the mortality and morbidity effects associated with the fine fraction of particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from fine particles have not been successful. Thus, it is not clear whether the two pollutants act synergistically, or whether being generated from similar combustion sources they represent the same pollution index for the observed effects.

SULFATES

Based on a level determined necessary to protect the most sensitive individuals, the California Air Resources Board in 1976 adopted a standard of 25 $\mu g/m^3$ (24-hour average) for sulfates.

In recent years, a vast majority of effects (mortality and morbidity) associated with fine particles (PM2.5) and sulfur dioxide have shown a similar association with ambient sulfate levels in some population studies. The efforts to fully separate the effects of sulfates from other coexisting pollutants have not been successful. This may be due to the fact that these pollutants covary under ambient conditions, having been emitted from common sources; and the effects observed may be due to the combination of pollutants, rather than a single pollutant.

A clinical study involving exposure of human subjects to sulfuric acid aerosol indicated that adolescent asthmatics may be a susceptible population subgroup with some changes in lung function observed with exposures below 100 $\mu g/m^3$. In general, however, laboratory exposures of human volunteers to sulfates at or near ambient levels have not found significant changes in lung function.

Results from animal studies involving exposures to sulfuric acid aerosol, ammonium bisulfate and ammonium sulfate indicate that acidic particles (former two) are more toxic than non-acidic particles (latter). In addition, the severity or magnitude of both mortality and morbidity effects is relatively higher in population studies of the eastern United States and Canada where sulfate concentrations are higher than for those observed in the western United States. Mixed results have been reported from studies which attempted to ascertain the role of acidity in determining the observed toxicity.

TOXIC AIR CONTAMINANTS

Toxic air contaminants are pollutants for which there generally are no ambient air quality standards. Under California's Air Toxics Program, CARB staff and OEHHA assess the health effects of substances that may pose a risk of adverse health effects. These effects are usually an increased risk for cancer or adverse birth outcome. After review by the state Scientific Review Panel, the CARB holds a public hearing on whether to formally list substances that may pose a significant risk to public health as a Toxic Air Contaminant.

CARB and OEHHA also establish potency factors for air toxics that are carcinogenic. The potency factors can be used to estimate the additional cancer risk from ambient levels of toxics. This estimate represents the chance of contracting cancer in an individual over a lifetime exposure to a given level of an air toxic and is usually expressed in terms of additional cancer cases per million people exposed.

The SCAQMD conducted a study on the ambient concentrations and estimated the potential health risks from air toxics (SQAQMD, 2000). A one year monitoring program was undertaken at 12 sites throughout the SCAB. Over 30 substances were measured, and annual average levels were calculated. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71% of the air toxics risk. A breakdown of the major contributors to the air toxics risk is shown in the following graph.

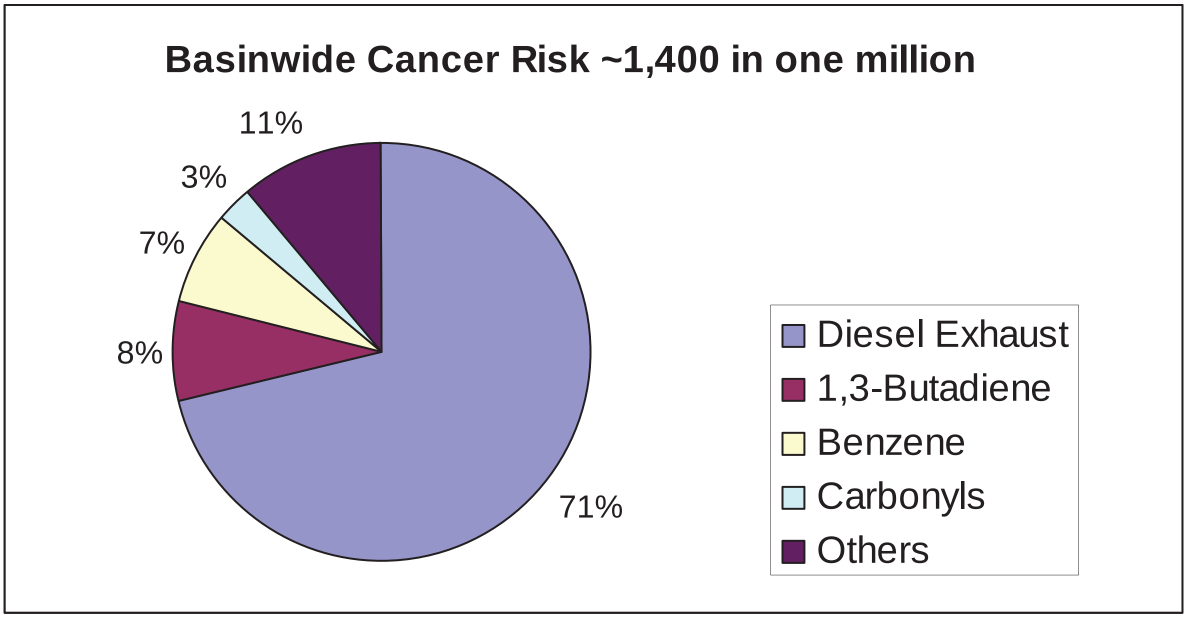

FIGURE 1

Major pollutants contributing to Air Toxics Cancer Risk in the South Coast Air Basin

For non-cancer health effects, OEHHA has developed acute and chronic Reference Exposure Levels (RELs). RELs are concentrations in the air below which adverse health effects are not likely to occur. Acute RELs refer to short-term exposures, generally of one-hour duration. Chronic RELs refer to long-term exposures of several years. The ratio of ambient concentration to the appropriate REL can be used to calculate a Hazard Index. A Hazard Index of less than one would not be expected to result in adverse effects.

The key air toxics contributing to risk from mobile and stationary sources are listed below.

TABLE 3

Key Air Toxic Air Contaminants in the SCAB

Mobile Sources	Stationary Sources
Acetaldehyde	Hexavalent Chromium
Benzene	Methylene Chloride
1,3 Butadiene	Nickel
Diesel Exhaust	Perchloroethylene
Formaldehyde	Trichloroethylene

CONCLUSION

The vast body of scientific evidence shows that the adverse impacts of air pollution in human and animal health are clear. A considerable number of population-based and laboratory studies have established a link between increased morbidity and in some instances, earlier mortality and air pollution.

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ATTACHMENT 1

COMMENTS RECEIVED ON DRAFT APPENDIX I FROM SCAQMD ADVISORY COUNCIL

The letter requesting comments and a copy of comments received follow.

Staff responses to comments are in Attachment 2.

→ Jean

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

STEPHEN R. MAGUIN
Chief Engineer and General Manager

March 27, 2007

RECEIVED
MAR 30 2007
SCAQMD PRA

South Coast Air Quality Management District
21865 E. Copley Drive
Diamond bar, CA 91765-4182

Attention: Elaine Chang, DrPH

Comments on Appendix I
Draft 2007 Air Quality Management Plan

Dear Elaine:

Thank you for the opportunity to represent LACSD and the Home Rule Advisory Group (HRAG) in submitting comments on Appendix I of the 2007 Draft Air Quality Management Plan. Speaking on behalf of the HRAG, while the AQMP has varying degrees of significant impacts on all the participants around the table, we all recognize the very considerable effort that is involved in developing an AQMP and applaud your efforts. We have the following comments on Appendix I and the health aspects of the draft 2007 AQMP:

1. While we believe Dr. Ospital has done a very good job assembling the documentation in support of the health effects associated with criteria air pollution, there was little or no explanation within the appendix or the plan as to how the plan was going to better things. There is, off course, a tacit understanding that lower levels of pollution should reduce health effects. Perhaps a few paragraphs could be added to the document to this effect. Perhaps enhanced health effects might be used as an additional consideration in the ranking of control measures so that the most beneficial measures health-wise are implemented first.

2. We continue to be confused about the focus on health effects of toxic air contaminants. On Page I-20 of the Appendix, the basin-wide cancer risk is reported to be 1400 in a million, largely the impact of Diesel particulate matter and other mobile source emissions. Page 3.1-54 of the Draft AQMP Program EIR also says that exposure to environmental pollution only accounts for two percent of cancer cases. But then we also looked at Dr. Thomas Mack's 2004 work Cancers in the Urban Development[1], a detailed analysis of which was presented to the Mobile Source Committee by Dr. Ospital in 2004. In the last paragraph on Page 7 of the 645 page tome, in a section entitled *Environmental and Other Causes of Cancer* the author states, "...no local increase in

[1] Cancers in the Urban Environment *Patterns of Malignant Disease in Los Angeles County and Its Neighborhoods*; Thomas Mack, Dept. of Preventive Medicine, Keck School of Medicine, Norris Comprehensive Cancer Center, University of Southern California; Elsevier Academic Press, 2004.

Recycled Paper

cancer due to pollution has yet been clearly identified in the United States. Even such highly publicized sites of pollution as the Love Canal, Three Mile Island and those popularized in the movies *Erin Brockovich* and *A Civil Action* did not produce clear evidence of a cancer excess, although each of these examples of irresponsible industrial contamination represented a clear potential danger to local residents and may have produced other medical problems."

In the very last sentence of that same book on Page 645, Dr. Mack also states, "As of this writing, no evidence of a malignancy caused by a strictly environmental carcinogen has yet been confirmed." We believe some clarification should be considered in the AQMP that acute and chronic effects of toxic air pollution should take priority, as far as regulations are concerned, over carcinogenic health effects.

3. It is also unclear how readings at air quality monitoring stations correlate with AQMP strategy. We are aware of SCAQMD efforts at the Rubidoux station, for instance, to improve the local road surfaces to reduce PM emissions, that hopefully will result in reduced monitor readings. We believe that a check should be done of all the District monitoring stations to confirm that they are not impacted by unusual site conditions and that they are reading truly representative air.

4. We believe that some analysis of indoor air quality and PM2.5 is appropriate at this time. A significant portion of human exposures to PM2.5 occurs indoors, where people spend ~85-90% of their time.[2]

We thank you for this opportunity to comment.

Yours very truly,

S. R. Maguin

Gregory M. Adams

Gregory M. Adams
Assistant Departmental Engineer
Air Quality Engineering
Technical Services Department

GMA:ch

cc: Jane Carney
Barry Wallerstein
Jean Ospital

[2] Journal of the Air and Waste Management Association, March 2007, *Indoor/Outdoor Relationships, Trends, and Carbonaceous Content of Fine Particulate Matter in Retirement Homes of the Los Angeles Basin*, p.366.

March 25, 2007

Dr. Elaine Chang
Deputy Executive Officers of Planning,
Rule Development and Area Service

Dear Dr. Chang,

It was nice talking with you and thank you for allowing me an extension on my comments for the AQMP - Health Effects of Air Pollutions- Appendix I document.

The overall documentation is excellent, and the following recommendations are not corrections but simply suggestions.

OZONE- I-2: Since ozone is such a strong oxidizing agent, perhaps a short explanation of how oxidizing agents affect biological tissues could be added.

PARTICULATE MATTER-I-11: The percentage change in health indicator for PM-10 is well documented in Table 2, page I-7-12. However, there is no percentage change for PM-2.5 health indicators. Does that imply that biological mechanisms, mortality and morbidity data for both particulate matter are the same, despite their variations in size and sources? If they are the same, that should be stated. If not, a second table for percentage change for PM 2.5 health indicators should be added.

ULTRAFINE PARTICLES-I-15: There are some reports indicating that the ultrafine particles might be embedded in cellular mitochondria. If that is correct, it would mean ultrafine particles are ubiquitous in every cell, therefore affecting cellular ATP production. That could explain why particulate matter might exacerbate diabetic conditions.

SULFUR DIOXIDE and SULFATES I-18-19: Perhaps a short definition of the differences between sulfur dioxide and sulfates could be included.

Respectfully Submitted,

Sam Huang, Ph.D
Member -SCAQMD Advisory Council
7458 Whitegate Ave.
Riverside, CA 92506

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

Office of the Executive Officer
Barry R. Wallerstein, D.Env.
909 396 2100, fax 909 396 3340

February 28, 2007

Mr. Greg Adams
Los Angeles County Sanitation District
1955 Workman Mill Road
Whittier, CA 90607

Re: SCAQMD Advisory Council

Dear ~~Mr. Adams~~: Greg

I would like to congratulate and welcome you as a member of the South Coast Air Quality Management District Advisory Council. I have attached a copy of the council's policies as well as a copy of the current roster.

Attached also for your review is Appendix I of Draft 2007 Air Quality Management Plan (AQMP)–Health Effects of Air Pollutants. This document presents a summary of scientific findings on the health effects of ambient air pollutants. The California Health and Safety Code Section 40471(b) requires that the South Coast Air Quality Management District Board prepare a report on the health impacts of particulate matter in the South Coast Air Basin in conjunction with the preparation of the AQMP. This document was prepared to fulfill that requirement. The Health and Safety Code also directs that the report be submitted to the Advisory Council for review and comment.

Please review the attached document and provide your comments by March 21, 2007.

Thank you again for agreeing to serve as a member of the Advisory Council. Should you have any questions on this matter, please do not hesitate to contact Elaine Chang, Deputy Executive Officer of Planning, Rule Development & Area Sources, at (909) 396-3186.

Sincerely,

Barry R. Wallerstein, D.Env.
Executive Officer

BRW/drw
Enclosures
cc: Home Rule Advisory Group
(w/o enclosures)

From: Office of the Executive Officer Date: 3/28/07
To: Elaine Chang
Cc: BRW
For your info. ✓ handling ✓
signature, etc.

Emily D.P. Nelson, D.Env.
Health and Environmental Risk Consultant
P.O. Box 3703
Palm Desert, CA 92261-3703
760-333-1776

March 26, 2007

Dr. Barry Wallerstein
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178

Re: Appendix I Review
Draft 2007 Air Quality Management Plan

Dear Barry,

Thank you for the opportunity to serve as a member of the South Coast Air Quality Management District Advisory Council. I look forward to making a positive contribution.

I have reviewed Appendix I of the Draft 2007 AQMP Health Effects of Air Pollutants. Since the document's summary is substantially taken from prior reviews, it was an easy review for me. The relevant studies have been discussed or referred to in a concise yet complete way for these purposes. I did note that two studies referred to in the Ultrafine Particles discussion on page I-15 (Oberdorster, et al, 1995 and Seaton, et al, 1995) are not included in the references section at the end of the appendix. I have spoken with Dr. Jean Ospital about this today.

I am sorry for the delay in my response. I was in Washington, DC last week and did not realize this review had not been completed.

Sincerely,

Emily Nelson, D.Env.

cc: Supervisor S. Roy Wilson

ATTACHMENT 2

STAFF RESPONSES TO COMMENTS RECEIVED

Comment:

Citations missing in References section.

Response:

The missing citations are below.

> Oberdorster G, et al. 1995. "Association of Particulate Air Pollution and Acute Mortality: Involvement of Ultra-Fine Particles." Inhalation Toxicol 7:111-124.
>
> Seaton A, et al. 1995. "Particulate Air Pollution and Acute Health Effects." Lancet 345:176-178.

Comment:

Include an explanation of how oxidizing agents affect biological tissue.

Response:

Oxidants such as ozone can readily react with biochemicals in tissues to alter their chemical structure and affect their biochemical functioning.

Comment:

Are percent changes in health indicators for $PM_{2.5}$ the same as for PM_{10}? Include a table for percentage change for $PM_{2.5}$ indicators as was done for $PM_{2.5}$.

Response:

The table for PM_{10} was used to provide a brief summary of information related to daily changes in PM levels with various health indicators, and was taken from a previous review paper. The discussion for $PM_{2.5}$ associated outcomes includes a brief description of some of the more recent studies of health effects, which does include percentage changes associated with changes in ambient exposures. The discussion shows that the relative changes associated with $PM_{2.5}$ levels are not the same as those with PM_{10}. The discussion also points out that some studies indicate the effects from PM_{10} exposures may be attributed to the $PM_{2.5}$ component, whereas other studies indicate that the fraction of PM_{10} larger than 2.5 µm diameter also contribute. The relative contribution of the different fractions of PM_{10} to health outcomes is an ongoing area of research.

Comment:

Ultrafine particles may affect cellular ATP production, and this could explain why particulate matter might exacerbate diabetic conditions.

Response:

Studies have indeed shown that ultrafine particles can penetrate into cell mitochondria and result in cell death. The mechanism is thought to include oxidative injury to cellular components. While there are studies that indicate individuals with diabetes may be more sensitive to the effects of air pollutants, staff opinion is that there are not sufficient data available to determine whether particulate exposures exacerbate diabetic conditions.

Comment:

Include a definition of the differences between sulfur dioxide and sulfates.

Response:

Sulfur dioxide (SO_2) occurs as a gas in the atmosphere, whereas sulfates (referring to the ion SO_4^{-2}) are generally found as a component of particulate matter.

Comment:

Add a discussion on how the AQMP would reduce health effects.

Response:

Staff assessment of the benefits of implementing the AQMP and attaining the ambient air quality standards is included in the Socioeconomic Report.

Comment:

Some clarification should be considered in the AQMP that acute and chronic effects of toxic air pollutants should take priority, as far as regulations are concerned, over carcinogenic effects.

Response:

Staff position is that all adverse effects are important.

Comment:

A check should be done of all the District monitoring stations to confirm that they are not impacted by unusual site conditions.

Response:

This is beyond the scope of Appendix I. The air quality monitoring network stations are sited in conformance with federal and state guidelines to be at locations representative of regional air quality.

Comment:

An analysis of indoor air quality and $PM_{2.5}$ should be included.

Response:

There are few studies on the health effects on indoor $PM_{2.5}$ exposures. The study cited by the commenter did not provide information on health effects.