AIR QUALITY ANALYSIS

TIDEWATER CROSSING

LSA

September 2006

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TIDEWATER CROSSING

Submitted to:

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LSA Project No. HDA530

LSA

September 2006

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1.0 EXECUTIVE SUMMARY

LSA Associates, Inc. (LSA) was retained to prepare an air quality study for the proposed Tidewater Crossing development, located in the Stockton region of unincorporated San Joaquin County, California.

This air quality study provides a discussion of the proposed project, the physical setting of the project area, and the regulatory framework for air quality. The report provides data on existing air quality, evaluates potential air quality impacts associated with the proposed project, and identifies feasible mitigation measures recommended for potentially significant impacts. Modeled air quality levels are based upon vehicle data and project trip generation provided in the project's *Traffic Impact Analysis* (Fehr & Peers, August 2006) and peak-hour turn volumes generated for the proposed project combined with emissions factors from the California Air Resources Board (ARB) EMFAC2002 program.

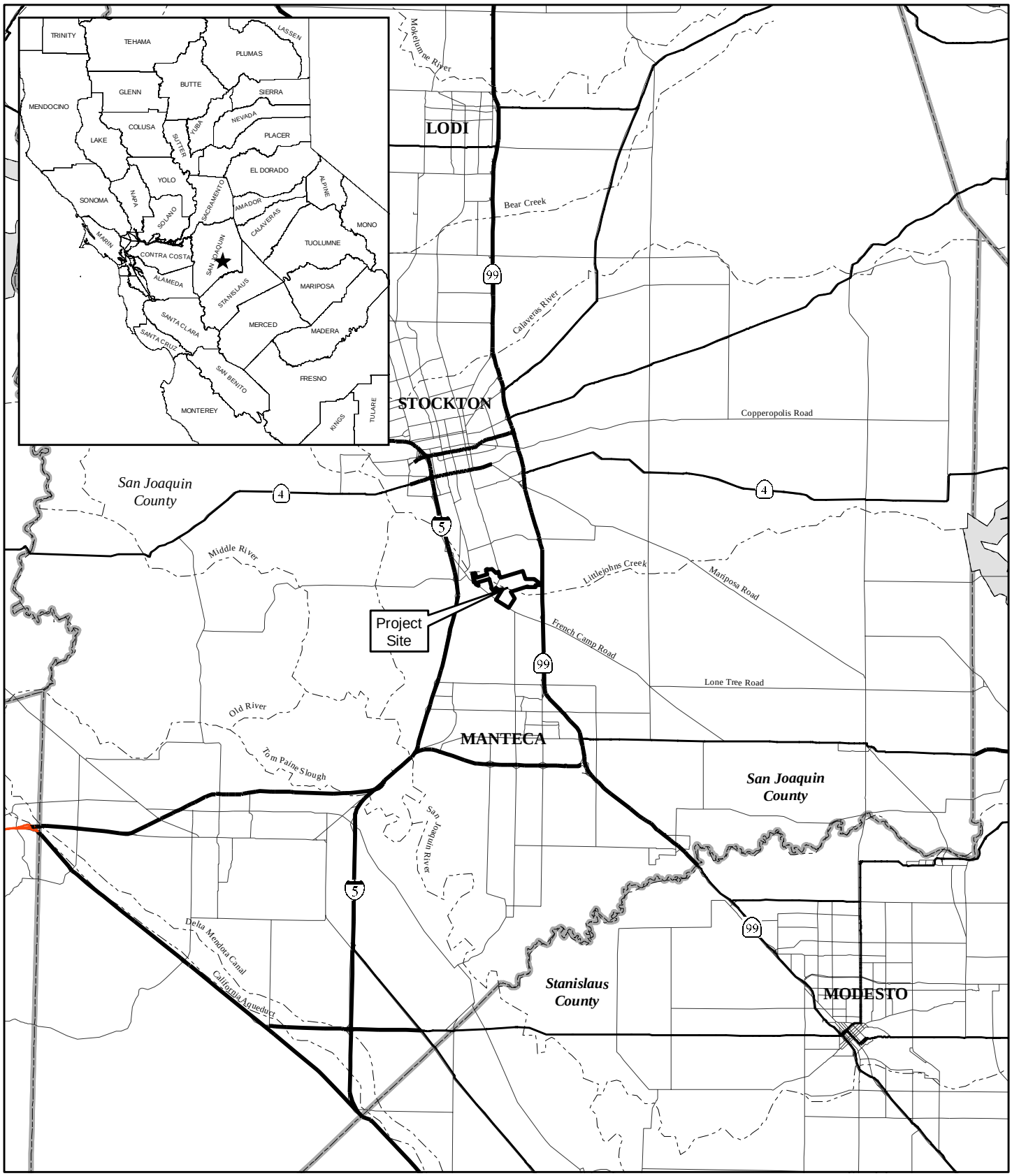
Historical air quality data show that existing ambient carbon monoxide (CO) levels for the project area and the general vicinity do not exceed either the State or federal ambient air quality standards. The project-related traffic would not significantly affect local CO levels under the existing conditions, and the CO concentrations with the project would be below the State and federal standards. Compliance with the San Joaquin Valley Air Pollution Control District (SJVAPCD) Rules and Regulations during construction will reduce construction-related air quality impacts from fugitive dust emissions and construction equipment emissions to less than significant. Pollutant emissions from project operation would exceed the SJVAPCD criteria pollutant thresholds for both reactive organic gases (ROG) and nitrogen oxides (NO_X). Even after implementing all feasible mitigation measures, these emissions would result in significant impacts.

This evaluation was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD, adopted August 1998 and revised January 10, 2002).

2.0 PROJECT DESCRIPTION

The City of Stockton (City) is proposing to develop an industrial/residential project on lands south of and contiguous to the Stockton Metropolitan Airport. The proposed project includes a General Plan Amendment, Master Development Plan (MDP), pre-zoning, Tentative Tract Map, Annexation, Sphere of Influence amendment for a portion of the project and a Development Agreement for approximately 909 acres of predominately in farmland and rural residential uses. The project is designated as Village L in the City's Draft 2035 General Plan land use diagram.

The project is generally bounded by the Stockton Metropolitan Airport to the north, Highway 99 to the east, Union Pacific Railroad to the west and East French Camp Road to the south. Figure 1 presents the project location.



LSA

FIGURE 1

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SCALE IN MILES

Tidewater Crossing

Project Location

SOURCE: U.S. CENSUS BUREAU TIGER 2K (2002)

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3.0 SETTING

3.1 EXISTING ENVIRONMENTAL SETTING

The project site is located within the County of San Joaquin, which is part of the San Joaquin Valley Air Basin (SJVAB) and is under the jurisdiction of the SJVAPCD. The air quality assessment for the proposed project includes estimating emissions associated with short-term construction and long-term operation of the proposed project.

A number of air quality modeling tools are available to assess the air quality impacts of projects. In addition, certain air districts, such as the SJVAPCD, have created guidelines and requirements to conduct air quality analyses. The methodologies provided by the SJVAPCD in its *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI, adopted August 20, 1998; revised January 10, 2002) and the Caltrans Transportation Project-Level Carbon Monoxide Protocol (December 1997) were adhered to in the assessment of air quality impacts for the proposed project.

3.1.1 Regional Air Quality

Both the State of California (State) and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants. As shown in Table A, these pollutants include ozone (O_3), CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), coarse particulate matter with a diameter of 10 microns or less (PM_{10}), fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to setting out primary and secondary AAQS, the State has established a set of episode criteria for O_3, CO, NO_2, SO_2, suspended particulate matter (PM_{10} and $PM_{2.5}$), and lead. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Health effects are progressively more severe as pollutant levels increase from Stage One to Stage Three. Table B lists the health effects of these criteria pollutants and their potential sources. These health effects would not occur unless the standards are exceeded by a large margin or for a prolonged period of time. The State AAQS are more stringent than the federal AAQS.

The California Clean Air Act (CCAA) provides the air districts, such as SJVAPCD, with the authority to manage transportation activities at indirect sources. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. Examples of this would be the motor vehicles at an intersection, a mall, and on highways. SJVAPCD also regulates stationary sources of pollution throughout its jurisdictional area. Direct emissions from motor vehicles are regulated by the California Air Resources Board (ARB).

Table A: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[2,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	No federal standard	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m^3)		0.08 ppm (157 µg/m^3) [8]		
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	20 µg/m^3		50 µg/m^3		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Nondispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Nondispersive Infrared Photometry (NDIR)
	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	–	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.25 ppm (470 µg/m^3)		–		
Lead	30-Day average	1.5 µg/m^3	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m^3	Same as Primary Standard	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	–	Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	–	
	3-Hour	–		–	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		–	–	
Visibility-Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 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**		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: ARB, May 17, 2006.

See footnotes on next page.

Footnotes:

1 California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1- and 24-hour); nitrogen dioxide; suspended particulate matter, PM_{10}; and visibility-reducing particles are values not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 mg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 Any equivalent procedure that can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7 Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

8 New federal eight-hour ozone and fine particulate matter standards were promulgated by the EPA on July 18, 1997. Contact the EPA for further clarification and current federal policies.

9 The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Table B: Summary of Health Effects of the Major Criteria Air Pollutants

Pollutants	Sources	Primary Effects
Ozone (O_3)	Atmospheric reaction of organic gases with nitrogen oxides in the presence of sunlight.	Aggravation of respiratory and cardiovascular diseases. Irritation of eyes. Impairment of cardiopulmonary function. Plant leaf injury.
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust. High temperature stationary combustion. Atmospheric reactions.	Aggravation of respiratory illness. Reduced visibility. Reduced plant growth. Formation of acid rain.
Carbon Monoxide (CO)	By-products from incomplete combustion of fuels and other carbon containing substances, such as motor exhaust. Natural events, such as decomposition of organic matter.	Reduced tolerance for exercise. Impairment of mental function. Impairment of fetal development. Death at high levels of exposure. Aggravation of some heart diseases (angina).
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	Stationary combustion of solid fuels. Construction activities. Industrial processes. Atmospheric chemical reactions.	Reduced lung function. Aggravation of the effects of gaseous pollutants. Aggravation of respiratory and cardiorespiratory diseases. Increased cough and chest discomfort. Soiling. Reduced visibility.
Sulfur Dioxide (SO_2)	Combustion of sulfur-containing fossil fuels. Smelting of sulfur-bearing metal ores. Industrial processes.	Aggravation of respiratory diseases (asthma, emphysema). Reduced lung function. Irritation of eyes. Reduced visibility. Plant injury. Deterioration of metals, textiles, leather, finishes, coatings, etc.
Lead (Pb)	Contaminated soil (e.g., from leaded fuels and lead-based paints).	Impairment of blood function and nerve construction. Behavioral and hearing problems in children.

Source: ARB 2001.

Climate/Meteorology. Air pollution is directly related to a region's topographic features. The SJVAB is defined by the Sierra Nevada mountains in the east (8,000–14,000 feet in elevation), the Coast Range in the west (averaging 3,000 feet in elevation), and the Tehachapi Mountains in the south (6,000–8,000 feet in elevation). The valley is basically flat with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Strait, where the Sacramento-San Joaquin Delta empties into San Francisco Bay. Thus, the San Joaquin Valley (SJV) could be considered a "bowl" open only to the north.

Although marine air generally flows into the basin from the San Joaquin River delta, the region's topographic features restrict air movement through and out of the basin. The Coast Range hinders wind access into the SJV from the west, the Tehachapis prevent southerly passage of air, and the high Sierra Nevada range is a significant barrier to the east. These topographic features result in weak air flow, which becomes blocked vertically by high barometric pressure over the SJV. As a result, the SJVAB is susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500–3,000 feet).

During the summer, wind speed and direction data indicate that wind usually originates at the north end of the SJV, through Tehachapi Pass, into the SJVAB. During the winter, wind speed and direction data indicate that wind occasionally originates in the south end of the SJV and flows in a north-northwesterly direction. Also during the winter months, the SJV experiences light, variable winds of less than 10 mph. Low wind speeds combined with low inversion layers in the winter create a climate conducive to high CO and PM_{10} concentrations.

The climatological station monitoring temperature closest to the project site is the Stockton station.[1] The monthly average temperature recorded at the Stockton station for the last 40 years ranges from 45.6°F in January to 77.3°F in July. January is typically the coldest month in this area. The Stockton monitoring station also records precipitation throughout the year. Average rainfall measured for the last 40 years varied from 2.85 inches in January to 0.73 inch or less between May and October, with an average annual total of 14.00 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Air Pollution Constituents and Attainment Status. The following describes the six criteria air pollutants and their attainment status in the Basin based on ARB's Area Designations (Activities and Maps) (http://www.arb.ca.gov/desig/desig.htm). ARB provided the Environmental Protection Agency (EPA) with California's recommendations for eight-hour ozone area designations on July 15, 2003. The recommendations and supporting data were an update to a report submitted to the EPA in July 2000. On December 3, 2003, the EPA published its proposed designations. EPA's proposal differs from the State's recommendations primarily on the appropriate boundaries for several nonattainment areas. ARB responded to the EPA's proposal on February 4, 2004. EPA finalized the eight-hour ozone designations in April 2004.

The EPA issued the final $PM_{2.5}$ implementation rule in fall 2004 and issued the final designations on December 14, 2004.

[1] Western Regional Climatic Center, 2006.

Table C summarizes the attainment status in the Basin for the major criteria pollutants.

The SJVAPCD, together with ARB, maintains ambient air quality monitoring stations in the San Joaquin area. The attainment status in the San Joaquin area of the SJVAB is shown in Table C.

Table C: Attainment Status in the San Joaquin Area

Emissions	State	Federal
Ozone: 1-hour	Severe Nonattainment	No Federal Standard (Revoked June 2005)
Ozone: 8-hour	Not Established	Serious Nonattainment
PM_{10}	Nonattainment	Serious Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Unclassified
NO_2	Attainment	Attainment/Unclassified
SO_2	Attainment	Unclassified
All others	Attainment/Unclassified	Attainment/Unclassified

Source: ARB, January 2006.

Ozone. O_3 (smog) is formed by photochemical reactions between NO_X and reactive organic gases (ROG) rather than being directly emitted. O_3 is a pungent, colorless gas typical of Southern California smog. Elevated O_3 concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly, and young children. O_3 levels peak during summer and early fall. The SJVAPCD requested an extreme (from severe) nonattainment designation for the federal one-hour ozone standard for the SJVAB. The EPA approved the redesignation of the federal ozone attainment status to extreme in April 2004. The approval of the redesignation reduces the emissions cap for major sources from 25 to 10 tons per year. However, it will push the attainment date from 2005 to 2010, thereby avoiding any penalty fees associated with a nonconforming status. Effective June 15, 2005, the EPA revoked in full the federal 1-hour ozone ambient air quality standard, including associated designations and classifications, in all areas except 14 early action compact areas that do not include the SJVAB.

Carbon Monoxide. CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. The San Joaquin area is designated as attainment/unclassified for federal CO standards and attainment for State CO standards.

Nitrogen Oxides. NO_2, a reddish brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_X. NO_X is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_2 decreases lung function and may reduce resistance

to infection. The entire Basin is designated as attainment/unclassified under federal standards and attainment under State standards.

Sulfur Dioxide. SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The San Joaquin area is designated as unclassified for federal CO standards and attainment for State SO_2 standards.

Lead. Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the bloodstream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The entire Basin is in attainment for federal and State lead standards.

Particulate Matter. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles, PM_{10}, derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle, $PM_{2.5}$, levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} can accumulate in the respiratory system and aggravate health problems such as asthma. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by current PM_{10} standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The entire Basin is a nonattainment area for federal and State PM_{10} and $PM_{2.5}$ standards.

Local Air Quality

The SJVAPCD, together with the ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the Stockton-Hazelton Station, and its air quality trends are representative of the ambient air quality in the project area. The pollutants monitored are CO, O_3, PM_{10}, $PM_{2.5}$, and NO_2.[1]

The ambient air quality data in Tables D and E show that CO and NO_2 levels are well below relevant State and federal standards. $PM_{2.5}$ levels were consistently lower than standards. O_3 and PM_{10} levels occasionally exceeded State and federal standards during the last three years. Also shown in Table E, SO_2 levels are not monitored in the San Joaquin Basin.

[1] Air quality data, 2002–2004; EPA and ARB Web sites.

Table D: Ambient Air Quality at the Stockton-Hazelton Air Monitoring Station

	One-Hour Carbon Monoxide[1]		One-Hour Ozone		Coarse Suspended Particulate (PM_{10})		Nitrogen Dioxide	
	Max. 1-Hour Conc. (ppm)	Number of Days Exceeded	Max. 1-Hour Conc. (ppm)	Number of Days Exceeded	Max. 24-Hour Conc. ($\mu g/m^3$)	Number of Days Exceeded	Max. Conc. (ppm)	Number of Days Exceeded
State Stds.	> 20 ppm/1 hr		> .09 ppm/1 hr		> 50 $\mu g/m^3$, 24 hrs		> .25 ppm/1 hr	
2005	2.6	0	0.10	3	61	2	0.09	0
2004	3.7	0	0.10	1	60	3	0.08	0
2003	5.8	0	0.10	3	90	3	0.09	0
Maximum	**5.8**		**0.10**		**90**		**0.09**	
Federal Stds.	> 35 ppm/1 hr		> .12 ppm/1 hr		> 150 $\mu g/m^3$, 24 hrs		0.053 ppm, annual average	
2005	2.6	0	0.10	NA	61	0	0.02	0
2004	3.7	0	0.10	NA	60	0	0.02	0
2003	5.8	0	0.10	NA	90	0	0.02	0
Maximum	**5.8**		**0.10**		**90**		**0.02**	

Source: ARB and EPA 2003–2005.
ppm = parts per million
NA = not applicable

[1] Data taken from the EPA Web site; others taken from the ARB Web site.

Table E: Ambient Air Quality at the Stockton-Hazelton Air Monitoring Station

	Eight-Hour Carbon Monoxide		Eight-Hour Ozone		Fine Suspended Particulate ($PM_{2.5}$)		Sulfur Dioxide	
	Max. 8-Hour Conc. (ppm)	**Number of Days Exceeded**	**Max. 8-Hour Conc. (ppm)**	**Number of Days Exceeded**	**Max. 24-Hour Conc. (μg/m)**	**Number of Days Exceeded**	**Max. Conc. (ppm)**	**Number of Days Exceeded**
State Stds.	≥ 9.0 ppm/8 hrs		> .07 ppm/8 hrs		No State Standard		> .04 ppm/24 hrs	
2005	2.7	0	0.09	NA[1]	44	NA	ND[2]	ND
2004	2.5	0	0.08	NA	41	NA	ND	ND
2003	3.1	0	0.09	NA	45	NA	ND	ND
Maximum	**3.1**		0.09		45		**ND**	
Federal Stds.	≥ 9.0 ppm/8 hrs		> .08 ppm/8 hrs		> 65 $\mu g/m^3$, 24 hrs		0.03 ppm, annual average	
2005	2.7	0	0.09	1	44	0	ND	ND
2004	2.5	0	0.08	0	41	0	ND	ND
2003	3.1	0	0.09	1	45	0	ND	ND
Maximum	**3.1**		0.09		45		**ND**	

Source: ARB and EPA 2003–2005.

1 NA = Not applicable; no State standard.
2 ND = No data. Monitored data for SO_2 are not available.

3.2 REGULATORY SETTINGS

3.2.1 Federal Regulations/Standards

Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established national ambient air quality standards (NAAQS) for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health.

Data collected at permanent monitoring stations are used by the EPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas have additional restrictions as required by the EPA.

The San Joaquin Valley is a single air quality nonattainment area containing six metropolitan planning organizations (MPOs) and two rural transportation-planning agencies (TPAs) that conduct transportation planning activities within the Valley. The EPA has designated the San Joaquin Council of Governments (SJCG) as the MPO responsible for ensuring the area's compliance with the CAA.

The EPA established new national air quality standards for ground-level O_3 and $PM_{2.5}$ matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the CAA, as applied in setting the new public health standards for O_3 and particulate matter, was unconstitutional as an improper delegation of legislative authority to the EPA. On February 27, 2001, the U.S. Supreme Court upheld the way the government sets air quality standards under the CAA. The court unanimously rejected industry arguments that the EPA must consider financial cost as well as health benefits in writing standards. The justices also rejected arguments that the EPA took lawmaking power from Congress when it set tougher standards for O_3 and particulate matter in 1997. Nevertheless, the court threw out the EPA's policy for implementing new O_3 rules, saying that the agency ignored a section of the law that restricts its authority to enforce such rules.

In April 2003, the EPA was cleared by the White House Office of Management and Budget (OMB) to implement the eight-hour ground-level O_3 standard. The EPA issued the proposed rule implementing the eight-hour O_3 standard in April 2003. The EPA completed final eight-hour nonattainment status on April 15, 2004 and revoked the one-hour standard on June 15, 2005.

The EPA issued the final $PM_{2.5}$ implementation rule in fall 2004. The EPA issued final designations on December 14, 2004.

3.2.2 State Regulations/Standards

The State of California began to set California ambient air quality standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are also listed in Table A.

Originally, there were no attainment deadlines for CAAQS. However, the CCAA of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas in the State to prepare attainment plans and proposed to classify each such area on the basis of

the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all.

The attainment plans require a minimum 5 percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. The San Joaquin area of the SJVAB is currently classified as a nonattainment area for three criteria pollutants: ozone (O_3), suspended coarse particulates (PM_{10}), and suspended fine particulates ($PM_{2.5}$).

3.2.3 Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act established the SJVAPCD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state.

The ARB coordinates and oversees both State and federal air pollution control programs in California. It oversees activities of local air quality management agencies and is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for EPA approval. The ARB maintains air quality monitoring stations throughout the State in conjunction with local air districts. Data collected at these stations are used by the ARB to classify air basins as “attainment” or “nonattainment” with respect to each pollutant and to monitor progress in attaining air quality standards. The ARB has divided the State into 15 air basins. Significant authority for air quality control within them has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

The California Clean Air Act (CCAA) provides the SJVAPCD with the authority to manage transportation activities at indirect sources and regulate stationary source emissions. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. An example of this would be the motor vehicles at an intersection, a mall, and on highways. As a State agency, the ARB regulates motor vehicles and fuels for their emissions.

3.2.4 Regional Air Quality Management Plan (AQMP)

The SJVAPCD has adopted several attainment plans to achieve State and federal air quality standards to comply with CCAA and federal Clean Air Act Amendments (FCAAA) requirements. The SJVAPCD must continuously monitor its progress in implementing attainment plans and must periodically report to the ARB and the EPA. It must also periodically revise its attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the CCAA and FCAAA.

The CCAA requires districts to adopt air quality attainment plans and to review and revise their plans to address deficiencies in interim measures of progress once every three years. The SJVAPCD’s AQMP was adopted in 1991 and was most recently updated in 2001.

To meet FCAAA and CCAA requirements, the SJVAPCD has submitted numerous plans for attaining ozone, PM_{10}, and CO standards. The ozone plan projected attainment of the federal ozone standard by 1999, but did not achieve its goal. The SJVAPCD is in the process of preparing a draft ozone plan and has requested a redesignation of extreme nonattainment status for the federal one-hour ozone standard. The CO plan demonstrates that CO attainment has already been reached. The PM_{10} attainment plan sets forth the approach the SJVAPCD will use to attain the NAAQS for PM_{10}. The SJVAPCD Governing Board adopted a 2003 PM_{10} plan in June 2003 and forwarded it to the ARB. The ARB adopted the plan in June 2003 and forwarded it to the EPA. The EPA found the plan complete in August 2003 and finalized approval of the 2003 PM_{10} plan in April 2004.

4.0 METHODOLOGY

4.1 THRESHOLDS OF SIGNIFICANCE

A project would normally be considered to have a significant effect on air quality if the project would conflict with or obstruct implementation of the applicable air quality plan; violate any air quality standards or contribute substantially to an existing or projected air quality violation; result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors); expose sensitive receptors to substantial pollutant concentrations; or create objectionable odors affecting a substantial number of people (Guidelines for the implementation of the California Environmental Quality Act, Appendix G, Public Resources Code §15000–15387).

In addition to the federal and State AAQS, as listed in Table A, there are annual emissions thresholds for operation of a proposed project in the SJVAB. The San Joaquin area of the SJVAB is administered by the SJVAPCD, and guidelines and emissions thresholds established by the SJVAPCD in its Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD, adopted August 1998 and revised January 10, 2002) are used in this analysis.

SJVAPCD also requires evaluation of cumulative air quality impacts. CEQA defines cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor, but collectively significant, projects. An adequate cumulative impact analysis considers a project over time and in conjunction with other related past, present, and reasonably foreseeable future projects whose impacts might compound or interrelate with those of the project being assessed.

4.1.1 Thresholds of Significance for Construction Emissions

A project's construction phase produces many types of emissions, but PM_{10} is the pollutant of greatest concern. Rather than provide a quantitative significance threshold for PM_{10}, the SJVAPCD has determined that a project's impacts will be less than significant if the project complies with certain mitigation measures. Accordingly, the SJVAPCD has determined that compliance with Regulation VIII for all sites and implementation of all other control measures indicated in Tables F and G below (as appropriate, depending on the size and location of the project site) will constitute sufficient mitigation to reduce PM_{10} impacts to a level considered less than significant.

The control measures listed in Table F (Regulation VIII Control Measures) are required for all construction sites by regulation. Table G lists additional measures that may be required due to sheer project size or proximity of the project to sensitive receptors. Table G also lists additional control measures (Optional Measures) that may be implemented if further emissions reductions are deemed necessary by the Lead Agency.

Table F: Regulation VIII Control Measures for Construction Emissions of PM_{10}

Regulation VIII Control Measures. The following controls are required to be implemented at all construction sites. (Includes changes effective May 15, 2002)
• All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover. • All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. • With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition. • When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. • All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.) • Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. • Within urban areas, trackouts shall be immediately removed when they extend 50 or more feet from the site, and at the end of each workday. • Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

Source: SJVAPCD, January 2002.

Table G: Enhanced and Additional Control Measures for Construction Emissions of PM_{10}

Enhanced Control Measures. The following measures should be implemented at construction sites when required to mitigate significant PM_{10} impacts (note, these measures are to be implemented in addition to Regulation VIII requirements):
• Limit traffic speeds on unpaved roads to 15 mph; and • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
Additional Control Measures. The following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors, or which for other reason warrant additional emissions reductions:
• Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site; • Install wind breaks at windward side(s) of construction areas; • Suspend excavation and grading activity when winds exceed 20 mph; and* • Limit area subject to excavation, grading, and other construction activity at any one time. *Regardless of windspeed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation.

Source: SJVAPCD, January 2002.

The SJVAPCD recognizes that the measures listed in Tables F and G focus on PM_{10} emissions from fugitive dust sources. It indicates that Lead Agencies seeking to reduce emissions from construction equipment exhaust should also consider the mitigation measures listed in Table H. The SJVAPCD recognizes that these measures are difficult to implement due to poor availability of alternative fueled equipment and the challenge of monitoring these activities.

Table H: Construction Equipment Mitigation Measures

Emissions Source	Mitigation Measures
Heavy duty equipment (scrapers, graders, trenchers, earth movers, etc.)	• Use of alternative fueled equipment or catalyst equipped diesel construction equipment. • Minimize idling time (e.g., 10 minutes maximum) • Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use • Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set) • Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways • Implement activity management (e.g., rescheduling activities to reduce short-term impacts)

Source: SJVAPCD, January 2002.

4.1.2 Thresholds of Significance for Operational

The term "project operations" refers to the full range of activities that can or may generate pollutant emissions when the development is functioning in its intended use. Ozone precursor emissions from project operations should be compared to the following thresholds:

- Ozone Precursor Thresholds
  - 10 tons per year of ROG
  - 10 tons per year of NO_X

Projects with operation related emissions that exceed any of the above listed emissions thresholds are considered significant.

- Local Carbon Monoxide Concentrations Thresholds
  - California State one hour CO standard of 20.0 ppm
  - California State eight hour CO standard of 9.0 ppm

Projects that would result in CO concentrations exceeding the above standards are considered significant.

- Odor Impacts Threshold

Any project with the potential to frequently expose members of the public to objectionable odors will be deemed to have a significant impact.

- Hazardous Air Pollutants (HAPs)

The definition of substantial pollutant concentrations varies for pollutants without defined significance standards or air contaminants not covered by the standard criteria cited above. With regard to hazardous air pollutants, also known as toxic air contaminants (TAC), "substantial" is taken to mean that the individual cancer risk exceeds a threshold considered to be a prudent risk management level. If best-available control technology for toxics (T-BACT) has been applied, the individual cancer risk to the maximum exposed individual (MEI) must not exceed 10 in 1 million in order for an impact to be determined not to be significant.

Airborne impacts are also derived from materials considered to be a nuisance for which there may not be associated standards. Odors or the deposition of large-diameter dust particles outside of the PM_{10} size range would be included in this category. It is considered a significant impact for odors and large-diameter dust particles if the SJVAPCD nuisance (Rule 402) would be potentially violated.

The following limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard indices (HI) from project emissions of TACs have been established for the Basin:

- **MICR and Cancer Burden.** MICR is the estimated probability of a potential MEI contracting cancer as a result of exposure to TACs over a period of 70 years for residential and 46 years for worker receptor locations. The MICR calculations include multipathway consideration, when applicable. Cancer Burden is the estimated increase in the occurrence of cancer cases in a population subject to a MICR of greater than or equal to one in one million (1.0×10^{-6}) resulting from exposure to TACs.
- The cumulative increase in MICR that is the sum of the calculated MICR values for all TACs emitted from the project will not result in any of the following:
    - An increased MICR greater than 10 in 1 million (1.0×10^{-5}) at any receptor location (assumes the project will be constructed with T-BACT)
    - A cancer burden greater than 0.5
- **Chronic HI.** This is the ratio of the estimated long-term level of exposure to a TAC for a potential MEI to its chronic reference exposure level. The chronic HI calculations include multipathway considerations, when applicable.
- The cumulative increase in total chronic HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.
- **Acute HI.** This is the ratio of the estimated maximum one-hour concentration of a TAC for a potential MEI to its acute reference exposure level.
- The cumulative increase in total acute HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.
- Accidental Release/Acutely Hazardous Air Emissions

The determination of significance for potential impacts from accidental release of acutely hazardous air pollutants should be made in consultation with local administering agency of the Risk

Management Preventive Program. The County health department, Office of Emergency Services, or local fire department is usually the administering agency.

4.1.3 Evaluating Cumulative Air Quality Impacts

The SJVAPCD recommends the following procedures to evaluate potential cumulative air quality impacts:

- Evaluate cumulative ozone impacts
- Evaluate cumulative PM_{10} impacts
- Evaluate cumulative CO impacts
- Evaluate cumulative hazardous air pollutant (HAP) impacts

5.0 IMPACTS

5.1 CONSTRUCTION IMPACTS

Air pollutant emissions associated with the project would occur over the short-term from construction activities, such as fugitive dust from site preparation and grading and emissions from equipment exhaust. The SJVAPCD's approach to CEQA analyses of PM_{10} impacts is to require implementation of effective and comprehensive control measures rather than detailed quantification of emissions. Because construction activities will incorporate all feasible mitigation measures, project-related construction emissions will be less than significant. Compliance with Regulation VIII and implementation of applicable control measures, indicated in Tables F and G, will reduce PM_{10} impacts to a level considered less than significant. No additional measures are recommended.

5.1.1 Odors

Construction of the proposed project may expose the surrounding sensitive receptors to airborne particulates and fugitive dust, as well as a small quantity of construction equipment pollutants (i.e., usually diesel-fueled vehicles and equipment). However, these impacts are temporary and of short duration and would cease to occur after construction is completed. No mitigation measures are recommended.

5.2 LONG-TERM PROJECT RELATED EMISSIONS IMPACTS

Long-term air emissions impacts are those associated with project-related stationary and mobile sources. The proposed project, consisting of mixed-use (residential, commercial, and industrial) uses, is only a newly added part of a larger overall area development. Because the larger overall development was approved, this analysis only shows the incremental increase. The stationary source emissions from this land use would come from its consumption of natural gas and electricity. The traffic study prepared for this project (Fehr & Peers, August 2006) predicted vehicular trips associated with the proposed project that would contribute to the congestion at intersections and along roadway segments in the project vicinity. As indicated in the traffic analysis, the proposed project would generate a total of 49,430 daily vehicular trips. Using the ARB model URBEMIS2002 (version 8.7.0), emissions associated with project-related vehicular trips and stationary sources were calculated and are included in Table I. As shown, the project's emissions would exceed the SJVAPCD annual emissions thresholds. Therefore, the proposed project's impact is significant, and mitigation measures are required. The URBEMIS2002 (version 8.7.0) model run is included in Appendix A.

Table I: Project Operational Emissions

Source	Pollutants (tons/year)	
	ROG	NO_X
Proposed Emissions		
Stationary sources:	79.03	8.94
Vehicular traffic:	97.98	129.84
Proposed Subtotal	**177.02**	**138.78**
SJVAPCD Threshold	**10**	**10**
Exceeds Threshold?	**Yes**	**Yes**
Significant Impact?	**Yes**	**Yes**

Source: LSA Associates, Inc., September 2006.

Despite great progress in air quality improvement, approximately 146 million people nationwide lived in counties with pollution levels above the NAAQS in 2002. Out of the 230 nonattainment areas identified during the 1990 Clean Air Act Amendment designation process, 124 areas remain as nonattainment today. In these nonattainment areas, however, the severity of air pollution episodes has decreased.

As shown in Table B, long-term exposure to elevated levels of criteria pollutants could result in potential health effects. However, as stated in the Thresholds of Significance, emissions thresholds established by the air district are used to manage total regional emissions within an air basin based on the air basin attainment status for criteria pollutants. These emissions thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations that may affect or delay the projected attainment target year for certain criteria pollutants. This is a Master Development Plan project, much larger than an individual project, and has the potential to result in large emissions.

Due to the conservative nature of the thresholds and the basin wide context of an individual project's emissions, there is no direct correlation of a single project to localized health effects. One individual project having emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like ROG and NO_X.

5.3 LONG-TERM MICROSCALE (CO HOT SPOT) ANALYSIS

Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality effects would occur when emissions from vehicular traffic increase in local areas as a result of the proposed project. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling

time and, thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentration, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Per EPA guidelines, the highest of the second-highest CO concentrations measured within the past three years were used as the background levels. At the Stockton-Hazelton Monitoring Station, the background concentrations are 4.9 ppm for the one-hour period and 3.0 ppm for the eight-hour period.

The highest CO concentrations would occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Based on the same traffic impact analysis used for the long-term regional analysis above, CO hot spot analyses were conducted for existing and cumulative conditions. The impact on local carbon monoxide levels was assessed with the ARB-approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify localized concentrations of carbon monoxide, often termed "hot spots." A brief discussion of input to the CALINE4 model follows. The analysis was performed for the worst-case wind angle and wind speed condition and is based upon the following assumptions:

- Selected modeling locations represent the intersections closest to the project site, with the highest project-related vehicle turning movements and the worst level of service deterioration.
- Twenty receptor locations with the possibility of extended outdoor exposure from 8 to 24 meters (approximately 26 to 79 feet) of the roadway centerline near intersections were modeled to determine CO concentrations.
- The calculations assume a meteorological condition of almost no wind (0.5 m/second), a suburban topographical condition between the source and receptor, and a mixing height of 1,000 m, representing a worst-case scenario for CO concentrations.
- CO concentrations are calculated for the one-hour averaging period and then compared to the one-hour standards. CO eight-hour averages are extrapolated using a persistence factor of 0.7 to predict the eight-hour concentration.
- Concentrations are given in parts per million (ppm) at each of the receptor locations.
- The "at-grade" link option with speed adjusted based on average cruise speed and number of vehicles per lane per hour was used rather than the "intersection" link selection in the CALINE4 model (Caltrans has suggested that the "intersection" link should not be used due to an inappropriate algorithm based on outdated vehicle distribution). Emissions factors from the EMFAC2002 model were used for the vehicle fleet.

- The highest level of the second-highest one-hour and eight-hour CO concentrations monitored at the Stockton-Hazelton Monitoring Station in the past three years were used as background concentrations (4.9 ppm for the one-hour CO and 3.0 ppm for the eight-hour CO). The "background" concentrations are then added to the model results for future with and without the proposed project conditions.

In order to determine the proposed project's impact on the local air quality, the CO levels were modeled at six intersections in the project area for the existing and future scenarios. These intersections are those that the project will have the most affect on traffic volumes. The CALINE4 model printouts are included in Appendix B.

Table J compares the CO concentrations from 2006 traffic with all approved operational projects in the vicinity of this project with CO concentrations from additional traffic related to the proposed project. Table K compares CO concentrations without and with the project in 2035. As shown in Tables J and K, none of the six intersections analyzed would exceed either the one-hour or the eight-hour CO concentration federal and State standards. Table J shows that in 2006, the proposed project would contribute at most a 2.0 ppm increase to the one-hour and a 1.4 ppm increase to the eight-hour CO concentrations at these intersections. Table K shows that in 2035, the proposed project would contribute at most a 0.2 ppm increase to the one-hour and a 0.2 ppm increase to the eight-hour CO concentrations at these intersections. The proposed project would not have a significant impact on local air quality for CO, and no mitigation measures would be required.

Table J: 2006 Without and With Project CO Concentrations[1]

Intersection	Receptor Distance to Road Centerline (Meters)	Project-Related Increase 1-hr/8-hr (ppm)	Without/With Project One-Hour CO Concentration (ppm)	Without/With Project Eight-Hour CO Concentration (ppm)	Exceeds State Standards?[2]	
					1-Hr	8-Hr
Airport Way/ Sperry Road	14 / 21	0.9 / 0.7	6.1 / 7.0	3.8 / 4.5	No	No
	14 / 19	0.7 / 0.5	6.1 / 6.8	3.8 / 4.3	No	No
	14 / 17	0.7 / 0.5	6.0 / 6.7	3.8 / 4.3	No	No
	14 / 17	0.6 / 0.4	6.0 / 6.6	3.8 / 4.2	No	No
Quantas Lane/ Arch Airport Road	21 / 21	0.8 / 0.6	6.1 / 6.9	3.8 / 4.4	No	No
	19 / 21	0.8 / 0.5	6.0 / 6.8	3.8 / 4.3	No	No
	19 / 21	0.8 / 0.5	6.0 / 6.8	3.8 / 4.3	No	No
	12 / 19	0.8 / 0.6	5.9 / 6.7	3.7 / 4.3	No	No
Airport Way/ Performance Drive	17 / 17	0.7 / 0.5	5.8 / 6.5	3.6 / 4.1	No	No
	17 / 17	0.6 / 0.5	5.8 / 6.4	3.6 / 4.1	No	No
	17 / 17	0.6 / 0.5	5.8 / 6.4	3.6 / 4.1	No	No
	15 / 15	0.6 / 0.5	5.8 / 6.4	3.6 / 4.1	No	No
Ash Street/ French Camp Road	8 / 17	2.0 / 1.4	6.1 / 8.1	3.8 / 5.2	No	No
	8 / 14	1.5 / 1.0	6.0 / 7.5	3.8 / 4.8	No	No
	8 / 14	1.5 / 1.0	6.0 / 7.5	3.8 / 4.8	No	No
	8 / 14	1.4 / 1.0	6.0 / 7.4	3.8 / 4.8	No	No
Airport Way/ French Camp Road	14 / 14	1.8 / 1.2	7.0 / 8.8	4.5 / 5.7	No	No
	14 / 14	1.5 / 1.0	7.0 / 8.5	4.5 / 5.5	No	No
	14 / 14	1.5 / 1.1	6.8 / 8.3	4.3 / 5.4	No	No
	14 / 14	1.5 / 1.0	6.7 / 8.2	4.3 / 5.3	No	No
French Camp Road/Sperry Road	24 / 24	0.0 / 0.0	4.9 / 4.9	3.0 / 3.0	No	No
	24 / 24	0.0 / 0.0	4.9 / 4.9	3.0 / 3.0	No	No
	22 / 22	0.0 / 0.0	4.9 / 4.9	3.0 / 3.0	No	No
	22 / 22	0.0 / 0.0	4.9 / 4.9	3.0 / 3.0	No	No

Source: LSA Associates, Inc., September 2006.

1 Includes ambient one-hour concentration of 4.9 ppm and ambient eight-hour concentration of 3.0 ppm, measured at the Stockton-Hazelton air quality monitoring station.

2 The one-hour CO State standard is 20 ppm, and the eight-hour CO standard is 9 ppm.

Table L: 2035 Without and With Project CO Concentrations[1]

Intersection	Receptor Distance to Road Centerline (Meters)	Project-Related Increase 1-hr/8-hr (ppm)	Without/With Project One-Hour CO Concentration (ppm)	Without/With Project Eight-Hour CO Concentration (ppm)	Exceeds State Standards?[2]	
					1-Hr	8-Hr
Airport Way/ Sperry Road	24 / 24	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	24 / 24	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	24 / 24	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	24 / 24	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
Quantas Lane/ Arch Airport Road	28 / 28	0.2 / 0.2	5.5 / 5.7	3.4 / 3.6	No	No
	26 / 26	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	24 / 24	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	21 / 21	0.1 / 0.0	5.4 / 5.5	3.4 / 3.4	No	No
Airport Way/ Performance Drive	24 / 24	0.0 / 0.0	5.4 / 5.4	3.4 / 3.4	No	No
	23 / 23	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	17 / 17	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	17 / 17	0.0 / 0.0	5.3 / 5.3	3.3 / 3.3	No	No
Ash Street/ French Camp Road	21 / 21	0.2 / 0.1	5.3 / 5.5	3.3 / 3.4	No	No
	21 / 21	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	20 / 20	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	20 / 20	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
Airport Way/ French Camp Road	26 / 28	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	24 / 26	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	22 / 24	0.2 / 0.1	5.4 / 5.6	3.4 / 3.5	No	No
	14 / 22	0.2 / 0.1	5.4 / 5.6	3.4 / 3.5	No	No
French Camp Road/Sperry Road	24 / 24	0.0 / 0.0	5.6 / 5.6	3.5 / 3.5	No	No
	24 / 24	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	22 / 22	0.0 / 0.0	5.5 / 5.5	3.4 / 3.4	No	No
	22 / 22	0.0 / 0.0	5.5 / 5.5	3.4 / 3.4	No	No

Source: LSA Associates, Inc., September 2006.

1 Includes ambient one-hour concentration of 4.9 ppm and ambient eight-hour concentration of 3.0 ppm, measured at the Stockton-Hazelton air quality monitoring station.

2 The one-hour CO State standard is 20 ppm, and the eight-hour CO standard is 9 ppm.

5.4 LONG-TERM HEALTH RISK ANALYSIS

5.4.1 Hazardous Air Pollutant Emissions

Light industrial land uses are proposed within the project limits at a distance of approximately 600 feet from the proposed residential developments. The operations expected to occur within these facility will not emit any HAPs in any significant quantity other than diesel exhaust. While there will be other toxic substances in use on site, compliance with State and federal handling regulations will bring emissions to below a level of significance. In addition to the proposed industrial facilities there is an existing Union Pacific Railroad track located adjacent to the proposed residential uses.

As the proposed project is currently in the planning stage the types of facilities to be located within the industrial areas are unknown. Therefore, the diesel health risk assessment was based on a large industrial facility that would generate up to 5,300 diesel truck trips per day. There is little rail activity on the rail line in the vicinity of the industrial uses. However, to evaluate the worst case conditions it is estimated that up to 84 trains would pass in a one-week period, an average of 12 trains per day.

The ARB model, EMFAC2002, was used for emissions factors for trucks both idling and operating to determine the total emissions of diesel exhaust particulate from the project. Emissions factors in the EPA's Technical Highlights: Emission Factors for Locomotives (EPA420-F-97-051, December 1997) were used as a source of train engine emission rates. Refer to Appendix D for details of the analysis.

Acute Project-Related Emissions Impacts. No activity related to the project will emit any toxic air pollutants that have short-term acute health effects. There will be no machinery within to emit any toxic air pollutants that have short-term acute health effects. Therefore, the potential for short-term acute exposure to project-related toxic emissions will be less than significant.

Carcinogenic and Chronic Project-Related Emissions Impacts. There would be long-term operational emissions from the diesel-powered trucks delivering and removing supplies and materials from the project site and diesel emissions from rail activities on the Union Pacific Railroad track. The primary health risk from heavy-duty truck and train emissions is diesel particulate exhaust. The results of the analysis are shown in Table M. Even with the conservative modeling technique used (concentrating all truck exhaust to emit from the center of the project area), the nearest residences to the would be exposed to an unmitigated inhalation cancer risk of no more than 1.6 in 1 million, less than the threshold of 10 in one million. The HI would be 0.002, less than the threshold of 1.0. No significant health risk would occur, and no mitigation is necessary.

Table M: Project-Related Health Risk Assessment Results

	Cancer Risk (number in 1 million)	Chronic Hazard Index
Nearest Residences	1.6	0.005
Threshold	**10**	**1.0**

Source: LSA Associates, Inc, February 2006.

5.4.2 Accidental Release/Acutely Hazardous Air Emissions

The proposed project is not expected to result in any accidental release of acutely hazardous air emissions. Compliance with the City and SJVAPCD rules and regulations will ensure that no significant accidental release/acutely hazardous air emissions impacts will occur. No mitigation measures are recommended.

5.5 AIR QUALITY MANAGEMENT PLAN CONSISTENCY

A consistency analysis determination plays an essential role in local agency project review by linking local planning and unique individual projects to the AQMP in the following ways. It fulfills the CEQA goal of fully informing local agency decision makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information, assuring local decision makers that they are making real contributions to clean air goals defined in the most current AQMP.

An AQMP describes air pollution control strategies to be taken by counties or regions classified as nonattainment areas. Currently, the project region is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$. The AQMP's main purpose is to bring the area into compliance with the requirements of federal and State air quality standards. Implementation of the proposed project would contribute to the delay of the attainment in the region.

The proposed project will require an amendment to be consistent with the City's General Plan. In addition, the proposed project's long-term regional air quality emissions would exceed the SJVAPCD's annual thresholds for NO_X and ROG. Therefore, the proposed project would be inconsistent with the AQMP and would result in a significant long-term air quality impact.

5.5.1 Cumulative Impact

The traffic study included vehicular trips from all present and future projects in the project vicinity. Therefore, CO hot spot concentrations calculated at these intersections include the cumulative traffic effect. Based on Tables J and K, no significant cumulative CO impacts would occur.

Construction of the project would contribute cumulatively to the local and regional air pollutants, together with other projects under construction. The project would result in significant operational air quality impacts. Thus, it is anticipated that these additional emissions would result in significant cumulative air quality impacts.

5.6 MITIGATION MEASURES

Construction Impacts

AIR-1: The SJVAPCD Regulation VIII, Control Measures for Construction Emissions of PM_{10} (as shown in Tables F and G), are required to be implemented at all construction sites. Compliance with the above Regulation VIII requirements would lessen the fugitive dust impact during construction to a level considered less than significant.

AIR-2: Short-Term, Construction Equipment Exhaust-Related Impacts

A. The project contractors are required to implement all feasible measures identified in Tables F, G, and H.

AIR-3: Architectural coatings and asphalt paving conducted on site shall adhere to rules and regulations stated in the SJVAPCD Rulebook. Compliance with Rule 4601, Architectural Coatings, and Rule 4641, Asphalt Paving, would lessen impacts from architectural coatings and asphalt paving to a level considered less than significant.

The above mitigation measures will reduce construction impacts to the extent feasible.

Operational Impacts

AIR-4: Project Operations-Related Impacts

The project would result in total (vehicular and stationary) daily emissions exceeding the annual emissions thresholds established by the SJVAPCD. No feasible mitigation measures would reduce the impacts to less than significant. However, the proposed project will be required to comply with Title 24 of the California Code of Regulations established by the Energy Commission regarding energy conservation standards. The project applicant shall incorporate the following in building plans:

A. Solar or low-emissions water heaters shall be used with combined space/water heater units.
B. Double-paned glass or window treatment for energy conservation shall be used in all exterior windows.
C. Buildings shall be oriented north/south where feasible.

Feasible mitigation measures do not exist that would reduce these impacts to less than significant levels.

6.0 REFERENCES

California Air Resources Board. Web site: http://www.arb.ca.gov.

Caltrans. Transportation Project-Level Carbon Monoxide Protocol. 1997.

Fehr & Peers. Traffic Impact Analysis. August 2006.

San Joaquin Valley Air Pollution Control District. Air Quality Attainment Plan. 2001.

San Joaquin Valley Air Pollution Control District. *Guide for Assessing and Mitigating the Air Quality Impacts.* Adopted August 20, 1998, and revised January 10, 2002.

Western Regional Climate Center. Web Site: http://www.wrcc.dri.edu.

APPENDIX A

URBEMIS2002 MODEL PRINTOUTS

URBEMIS 2002 For Windows 8.7.0

File Name: P:\HDA530\Modeling\Project URBEMIS-Rev.urb
Project Name: Tidewater Crossing
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	523.47	45.99	111.98	0.84	0.41

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	537.77	607.70	5,937.34	3.40	593.03

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	1,061.24	653.68	6,049.32	4.24	593.44

URBEMIS 2002 For Windows 8.7.0

File Name: P:\HDA530\Modeling\Project URBEMIS-Rev.urb
Project Name: Tidewater Crossing
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	608.66	75.02	750.54	19.44	136.39

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	535.11	918.98	6,530.89	3.37	593.03

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	1,143.77	994.00	7,281.43	22.81	729.42

URBEMIS 2002 For Windows 8.7.0

File Name: P:\HDA530\Modeling\Project URBEMIS-Rev.urb
Project Name: Tidewater Crossing
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	3.46	45.59	25.02	0	0.09
Hearth	97.64	29.44	725.52	19.44	136.31
Landscaping - No winter emissions					
Consumer Prdcts	130.28	-	-	-	-
Architectural Coatings	377.28	-	-	-	-
TOTALS(lbs/day,unmitigated)	608.66	75.02	750.54	19.44	136.39

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	202.31	346.41	2,481.16	1.28	223.70
Condo/townhouse general	15.61	26.73	191.48	0.10	17.26
Elementary school	1.48	2.56	18.08	0.01	1.65
Regnl shop. center	92.81	159.38	1,126.31	0.58	102.78
Warehouse	180.99	310.83	2,196.55	1.13	200.44
General light industry	41.91	73.07	517.32	0.27	47.20
TOTAL EMISSIONS (lbs/day)	535.11	918.98	6,530.89	3.37	593.03

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	798.00	7.20 trips/dwelling unit	2,394.00	17,229.62
Condo/townhouse general	16.81	4.94 trips/dwelling unit	269.00	1,329.67
Elementary school		0.13 trips/1000 sq. ft.	1,050.00	139.65
Regnl shop. center		49.19 trips/1000 sq. ft.	186.20	9,159.18
Warehouse		3.75 trips/1000 sq. ft.	4,763.30	17,862.38
General light industry		6.97 trips/1000 sq. ft.	529.30	3,689.22
		Sum of Total Trips		49,409.71
		Total Vehicle Miles Traveled		390,614.82

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Elementary school	20.0	10.0	70.0
Regnl shop. center	2.0	1.0	97.0
Warehouse	2.0	1.0	97.0
General light industry	50.0	25.0	25.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/798. to 7.197/798.
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/16.81 to 4.943/16.81

Changes made to the default values for Area

The wood stove percentage changed from 67 to 20.
The natural gas fireplace percentage changed from 33 to 80.
The landscape year changed from 2005 to 2007.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0086.
The residential Arch. Coatings paint thickness changed from 1 to 4.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.011.
The nonresidential Arch. Coatings paint thickness changed from 1 to 4.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2007.

URBEMIS 2002 For Windows 8.7.0

File Name: P:\HDA530\Modeling\Project URBEMIS-Rev.urb
Project Name: Tidewater Crossing
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	3.46	45.59	25.02	0	0.09
Hearth - No summer emissions					
Landscaping	12.45	0.40	86.96	0.84	0.32
Consumer Prdcts	130.28	-	-	-	-
Architectural Coatings	377.28	-	-	-	-
TOTALS(lbs/day,unmitigated)	523.47	45.99	111.98	0.84	0.41

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	191.35	228.77	2,293.49	1.29	223.70
Condo/townhouse general	15.87	17.65	177.00	0.10	17.26
Elementary school	14.86	1.69	16.41	0.01	1.65
Regnl shop. center	73.82	105.53	1,006.70	0.59	102.78
Warehouse	201.41	205.80	1,963.28	1.14	200.44
General light industry	40.47	48.25	480.46	0.27	47.20
TOTAL EMISSIONS (lbs/day)	537.77	607.70	5,937.34	3.40	593.03

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	798.00	7.20 trips/dwelling unit	2,394.00	17,229.62
Condo/townhouse general	16.81	4.94 trips/dwelling unit	269.00	1,329.67
Elementary school		0.13 trips/1000 sq. ft.	1,050.00	139.65
Regnl shop. center		49.19 trips/1000 sq. ft.	186.20	9,159.18
Warehouse		3.75 trips/1000 sq. ft.	4,763.30	17,862.38
General light industry		6.97 trips/1000 sq. ft.	529.30	3,689.22
		Sum of Total Trips		49,409.71
		Total Vehicle Miles Traveled		390,614.82

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Elementary school	20.0	10.0	70.0
Regnl shop. center	2.0	1.0	97.0
Warehouse	2.0	1.0	97.0
General light industry	50.0	25.0	25.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/798. to 7.197/798.
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/16.81 to 4.943/16.81

Changes made to the default values for Area

The wood stove percentage changed from 67 to 20.
The natural gas fireplace percentage changed from 33 to 80.
The landscape year changed from 2005 to 2007.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0086.
The residential Arch. Coatings paint thickness changed from 1 to 4.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.011.
The nonresidential Arch. Coatings paint thickness changed from 1 to 4.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2007.

URBEMIS 2002 For Windows 8.7.0

File Name: P:\HDA530\Modeling\Project URBEMIS-Rev.urb
Project Name: Tidewater Crossing
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	79.03	8.94	42.08	0.17	4.89

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	97.98	129.84	1,119.67	0.62	108.23

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	177.02	138.78	1,161.76	0.79	113.12

URBEMIS 2002 For Windows 8.7.0

File Name: P:\HDA530\Modeling\Project URBEMIS-Rev.urb
Project Name: Tidewater Crossing
Project Location: San Joaquin Valley
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES (Tons per Year, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.63	8.32	4.57	0.00	0.02
Hearth	3.71	0.58	29.69	0.10	4.84
Landscaping	1.12	0.04	7.83	0.08	0.03
Consumer Prdcts	23.78	-	-	-	-
Architectural Coatings	49.80	-	-	-	-
TOTALS (tpy, unmitigated)	79.03	8.94	42.08	0.17	4.89

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	35.59	48.91	429.98	0.24	40.82
Condo/townhouse general	2.88	3.77	33.18	0.02	3.15
Elementary school	1.90	0.36	3.10	0.00	0.30
Regnl shop. center	14.63	22.54	191.00	0.11	18.76
Warehouse	35.51	43.95	372.49	0.21	36.58
General light industry	7.47	10.32	89.93	0.05	8.61
TOTAL EMISSIONS (tons/yr)	97.98	129.84	1,119.67	0.62	108.23

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Season: Annual

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	798.00	7.20 trips/dwelling unit	2,394.00	17,229.62
Condo/townhouse general	16.81	4.94 trips/dwelling unit	269.00	1,329.67
Elementary school		0.13 trips/1000 sq. ft.	1,050.00	139.65
Regnl shop. center		49.19 trips/1000 sq. ft.	186.20	9,159.18
Warehouse		3.75 trips/1000 sq. ft.	4,763.30	17,862.38
General light industry		6.97 trips/1000 sq. ft.	529.30	3,689.22
		Sum of Total Trips		49,409.71
		Total Vehicle Miles Traveled		390,614.82

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
Regnl shop. center				2.0	1.0	97.0
Warehouse				2.0	1.0	97.0
General light industry				50.0	25.0	25.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/798. to 7.197/798.
The Trip Rate and/or Acreage values for Condominium/townhouse general
have changed from the defaults 6.9/16.81 to 4.943/16.81

Changes made to the default values for Area

The wood stove percentage changed from 67 to 20.
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The landscape year changed from 2005 to 2007.
The residential Arch. Coatings ROG emission factor changed from 0.0185 to 0.0086.
The residential Arch. Coatings paint thickness changed from 1 to 4.
The nonresidential Arch. Coatings ROG emission factor changed from 0.0185 to 0.011.
The nonresidential Arch. Coatings paint thickness changed from 1 to 4.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2007.

APPENDIX B

CALINE4 MODEL PRINTOUTS

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	14	-150	14	0	AG	1370	1.5	.0	17.0
B. Airport NBD	14	0	14	150	AG	1610	1.5	.0	13.5
C. Airport NBL	9	-150	0	0	AG	460	1.5	.0	10.0
D. Airport SBA	-14	150	-14	0	AG	1470	1.5	.0	17.0
E. Airport SBD	-14	0	-14	-150	AG	1900	1.5	.0	13.5
F. Airport SBL	-9	150	0	0	AG	160	1.5	.0	10.0
G. Sperry R EBA	-150	-12	0	-12	AG	2220	1.2	.0	20.5
H. Sperry R EBD	0	-12	150	-12	AG	2430	.9	.0	17.0
I. Sperry R EBL	-150	-5	0	0	AG	250	1.5	.0	10.0
J. Sperry R WBA	150	12	0	12	AG	2210	1.2	.0	20.5
K. Sperry R WBD	0	12	-150	12	AG	2560	.9	.0	17.0
L. Sperry R WBL	150	5	0	0	AG	360	1.5	.0	10.0
M. Airport NBAX	14	-750	14	-150	AG	1830	.8	.0	17.0
N. Airport NBDX	14	150	14	750	AG	1610	.8	.0	13.5
O. Airport SBAX	-14	750	-14	150	AG	1630	.8	.0	17.0
P. Airport SBDX	-14	-150	-14	-750	AG	1900	.8	.0	13.5
Q. Sperry EBAX	-750	-12	-150	-12	AG	2470	.8	.0	20.5
R. Sperry EBDX	150	-12	750	-12	AG	2430	.8	.0	17.0
S. Sperry WBAX	750	12	150	12	AG	2570	.8	.0	20.5
T. Sperry WBDX	-150	12	-750	12	AG	2560	.8	.0	17.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	24	-22	1.8
2. NW	-24	22	1.8
3. SW	-22	-24	1.8
4. NE	22	24	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	22	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	24	1.8
9. SE mdblk	24	-150	1.8
10. NW mdblk	-24	150	1.8
11. SW mdblk	-22	-150	1.8
12. NE mdblk	22	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	22	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	24	1.8
17. SE blk	24	-600	1.8
18. NW blk	-24	600	1.8
19. SW blk	-22	-600	1.8
20. NE blk	22	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	278.	.6	.1	.0	.0	.0	.0	.0	.2	.0
2. NW	169.	.6	.0	.0	.0	.0	.2	.0	.0	.0
3. SW	79.	.6	.0	.0	.0	.0	.2	.0	.0	.2
4. NE	191.	.6	.2	.1	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.5	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	99.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	81.	.5	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	261.	.5	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	350.	.5	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.5	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	10.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	189.	.5	.0	.3	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035nP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Quantas NBA	12	-150	12	0	AG	1230	1.5	.0	13.5
B. Quantas NBD	12	0	12	150	AG	570	1.0	.0	10.0
C. Quantas NBL	9	-150	0	0	AG	1310	1.5	.0	10.0
D. Quantas SBA	-9	150	-9	0	AG	180	1.4	.0	13.5
E. Quantas SBD	-9	0	-9	-150	AG	1580	1.5	.0	10.0
F. Quantas SBL	-5	150	0	0	AG	350	1.5	.0	10.0
G. Arch-Air EBA	-150	-12	0	-12	AG	2000	1.2	.0	20.5
H. Arch-Air EBD	0	-12	150	-12	AG	2700	.9	.0	15.3
I. Arch-Air EBL	-150	-5	0	0	AG	250	1.5	.0	10.0
J. Arch-Air WBA	150	16	0	16	AG	1150	1.1	.0	20.5
K. Arch-Air WBD	0	16	-150	16	AG	2270	.9	.0	17.0
L. Arch-Air WBL	150	9	0	0	AG	650	1.5	.0	10.0
M. Quantas NBAX	12	-750	12	-150	AG	2540	.8	.0	13.5
N. Quantas NBDX	12	150	12	750	AG	570	.8	.0	10.0
O. Quantas SBAX	-9	750	-9	150	AG	530	.8	.0	13.5
P. Quantas SBDX	-9	-150	-9	-750	AG	1580	.8	.0	10.0
Q. Arch-Ai EBAX	-750	-12	-150	-12	AG	2250	.8	.0	20.5
R. Arch-Ai EBDX	150	-12	750	-12	AG	2700	.8	.0	15.3
S. Arch-Ai WBAX	750	16	150	16	AG	1800	.8	.0	20.5
T. Arch-Ai WBDX	-150	16	-750	16	AG	2270	.8	.0	17.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-21	1.8
2. NW	-17	26	1.8
3. SW	-15	-24	1.8
4. NE	19	28	1.8
5. ES mdblk	150	-21	1.8
6. WN mdblk	-150	26	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	28	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	19	150	1.8
13. ES blk	600	-21	1.8
14. WN blk	-600	26	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	28	1.8
17. SE blk	21	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	19	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	279.	.6	.1	.0	.0	.0	.0	.0	.2	.0
2. NW	170.	.6	.0	.0	.0	.0	.2	.0	.0	.0
3. SW	79.	.6	.0	.0	.0	.0	.2	.0	.0	.2
4. NE	188.	.5	.1	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.5	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	100.	.4	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.4	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	258.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	346.	.5	.2	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	12.	.5	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	186.	.3	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	352.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	8.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035nP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	9	-150	9	0	AG	950	1.2	.0	13.5
B. Airport NBD	9	0	9	150	AG	1800	.9	.0	11.8
C. Airport NBL	5	-150	0	0	AG	140	1.5	.0	10.0
D. Airport SBA	-16	150	-16	0	AG	1120	1.2	.0	13.5
E. Airport SBD	-16	0	-16	-150	AG	1230	.9	.0	11.8
F. Airport SBL	-12	150	0	0	AG	700	1.5	.0	10.0
G. Performa EBA	-150	-7	0	-7	AG	250	1.4	.0	10.0
H. Performa EBD	0	-7	150	-7	AG	840	1.3	.0	10.0
I. Performa EBL	-150	-5	0	0	AG	200	1.5	.0	10.0
J. Performa WBA	150	9	0	9	AG	1150	1.5	.0	13.5
K. Performa WBD	0	9	-150	9	AG	740	1.0	.0	10.0
L. Performa WBL	150	5	0	0	AG	100	1.5	.0	10.0
M. Airport NBAX	9	-750	9	-150	AG	1090	.8	.0	13.5
N. Airport NBDX	9	150	9	750	AG	1800	.8	.0	11.8
O. Airport SBAX	-16	750	-16	150	AG	1820	.8	.0	13.5
P. Airport SBDX	-16	-150	-16	-750	AG	1230	.8	.0	11.8
Q. Perform EBAX	-750	-7	-150	-7	AG	450	.8	.0	10.0
R. Perform EBDX	150	-7	750	-7	AG	840	.8	.0	10.0
S. Perform WBAX	750	9	150	9	AG	1250	.8	.0	13.5
T. Perform WBDX	-150	9	-750	9	AG	740	.8	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-24	15	1.8
3. SW	-23	-14	1.8
4. NE	16	17	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-24	150	1.8
11. SW mdblk	-23	-150	1.8
12. NE mdblk	16	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	17	1.8
17. SE blk	17	-600	1.8
18. NW blk	-24	600	1.8
19. SW blk	-23	-600	1.8
20. NE blk	16	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	349.	.5	.0	.2	.0	.0	.0	.0	.0	.0
2. NW	97.	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	8.	.4	.0	.0	.0	.1	.0	.0	.0	.0
4. NE	189.	.4	.1	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	281.	.3	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	261.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.3	.1	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	167.	.4	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	8.	.3	.0	.0	.0	.0	.1	.0	.0	.0
12. NE mdblk	189.	.4	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	172.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035nP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	*	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
17. SE blk	*	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. French C NBA	5	-150	5	0	AG	770	1.5	.0	11.8
B. French C NBD	5	0	5	150	AG	250	.9	.0	10.0
C. French C NBL	2	-150	0	0	AG	250	1.5	.0	10.0
D. French C SBA	-5	150	-5	0	AG	150	1.4	.0	11.8
E. French C SBD	-5	0	-5	-150	AG	830	1.3	.0	10.0
F. French C SBL	-2	150	0	0	AG	20	1.5	.0	10.0
G. Ash St. EBA	-150	-11	0	-11	AG	1580	1.2	.0	17.0
H. Ash St. EBD	0	-11	150	-11	AG	2050	.9	.0	15.3
I. Ash St. EBL	-150	-5	0	0	AG	200	1.5	.0	10.0
J. Ash St. WBA	150	11	0	11	AG	460	1.1	.0	17.0
K. Ash St. WBD	0	11	-150	11	AG	780	.8	.0	15.3
L. Ash St. WBL	150	5	0	0	AG	480	1.5	.0	10.0
M. French NBAX	5	-750	5	-150	AG	1020	.8	.0	11.8
N. French NBDX	5	150	5	750	AG	250	.8	.0	10.0
O. French SBAX	-5	750	-5	150	AG	170	.8	.0	11.8
P. French SBDX	-5	-150	-5	-750	AG	830	.8	.0	10.0
Q. Ash St. EBAX	-750	-11	-150	-11	AG	1780	.8	.0	17.0
R. Ash St. EBDX	150	-11	750	-11	AG	2050	.8	.0	15.3
S. Ash St. WBAX	750	11	150	11	AG	940	.8	.0	17.0
T. Ash St. WBDX	-150	11	-750	11	AG	780	.8	.0	15.3

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	13	-20	1.8
2. NW	-13	20	1.8
3. SW	-12	-21	1.8
4. NE	12	21	1.8
5. ES mdblk	150	-20	1.8
6. WN mdblk	-150	20	1.8
7. WS mdblk	-150	-21	1.8
8. EN mdblk	150	21	1.8
9. SE mdblk	13	-150	1.8
10. NW mdblk	-13	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-20	1.8
14. WN blk	-600	20	1.8
15. WS blk	-600	-21	1.8
16. EN blk	600	21	1.8
17. SE blk	13	-600	1.8
18. NW blk	-13	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	278.	.4	.0	.0	.0	.0	.0	.0	.2	.0
2. NW	172.	.4	.0	.0	.0	.0	.1	.0	.0	.0
3. SW	80.	.4	.0	.0	.0	.0	.0	.0	.0	.2
4. NE	187.	.4	.1	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.3	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	99.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.3	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	259.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	349.	.3	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	11.	.3	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035nP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	9	-150	9	0	AG	1140	1.5	.0	13.5
B. Airport NBD	9	0	9	150	AG	1100	1.5	.0	10.0
C. Airport NBL	5	-150	0	0	AG	240	1.5	.0	10.0
D. Airport SBA	-7	150	-7	0	AG	980	1.5	.0	10.0
E. Airport SBD	-7	0	-7	-150	AG	1780	1.5	.0	10.0
F. Airport SBL	-5	150	0	0	AG	330	1.5	.0	10.0
G. French C EBA	-150	-12	0	-12	AG	1960	1.2	.0	20.5
H. French C EBD	0	-12	150	-12	AG	2320	.9	.0	17.0
I. French C EBL	-150	-5	0	0	AG	150	1.5	.0	10.0
J. French C WBA	150	16	0	16	AG	800	1.1	.0	20.5
K. French C WBD	0	16	-150	16	AG	1000	.8	.0	17.0
L. French C WBL	150	9	0	0	AG	600	1.5	.0	10.0
M. Airport NBAX	9	-750	9	-150	AG	1380	.8	.0	13.5
N. Airport NBDX	9	150	9	750	AG	1100	.8	.0	10.0
O. Airport SBAX	-7	750	-7	150	AG	1310	.8	.0	10.0
P. Airport SBDX	-7	-150	-7	-750	AG	1780	.8	.0	10.0
Q. French EBAX	-750	-12	-150	-12	AG	2110	.8	.0	20.5
R. French EBDX	150	-12	750	-12	AG	2320	.8	.0	17.0
S. French WBAX	750	16	150	16	AG	1400	.8	.0	20.5
T. French WBDX	-150	16	-750	16	AG	1000	.8	.0	17.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-22	1.8
2. NW	-14	26	1.8
3. SW	-14	-24	1.8
4. NE	15	28	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	26	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	28	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	26	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	28	1.8
17. SE blk	17	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	350.	.5	.0	.1	.0	.0	.0	.0	.0	.1
2. NW	172.	.5	.0	.0	.0	.0	.2	.0	.0	.0
3. SW	12.	.6	.0	.0	.0	.1	.2	.0	.1	.0
4. NE	189.	.5	.1	.1	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.4	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	99.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.4	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	259.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.5	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	9.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035nP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035nP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. French C NBA	9	-150	9	0	AG	160	1.4	.0	10.0
B. French C NBD	9	0	9	150	AG	480	1.3	.0	10.0
C. French C NBL	9	-150	0	0	AG	614	1.5	.0	10.0
D. French C SBA	-7	150	-7	0	AG	760	1.5	.0	10.0
E. French C SBD	-7	0	-7	-150	AG	1011	1.5	.0	10.0
F. French C SBL	-5	150	0	0	AG	110	1.5	.0	10.0
G. Sperry R EBA	-150	-12	0	-12	AG	2826	1.4	.0	20.5
H. Sperry R EBD	0	-12	150	-12	AG	2255	.9	.0	17.0
I. Sperry R EBL	-150	-5	0	0	AG	300	1.5	.0	10.0
J. Sperry R WBA	150	12	0	12	AG	2289	1.2	.0	20.5
K. Sperry R WBD	0	12	-150	12	AG	3453	1.0	.0	17.0
L. Sperry R WBL	150	5	0	0	AG	140	1.5	.0	10.0
M. French NBAX	9	-750	9	-150	AG	774	.8	.0	10.0
N. French NBDX	9	150	9	750	AG	480	.8	.0	10.0
O. French SBAX	-7	750	-7	150	AG	870	.8	.0	10.0
P. French SBDX	-7	-150	-7	-750	AG	1011	.8	.0	10.0
Q. Sperry EBAX	-750	-12	-150	-12	AG	3126	.8	.0	20.5
R. Sperry EBDX	150	-12	750	-12	AG	2255	.8	.0	17.0
S. Sperry WBAX	750	12	150	12	AG	2429	.8	.0	20.5
T. Sperry WBDX	-150	12	-750	12	AG	3453	.8	.0	17.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035nP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	15	-22	1.8
2. NW	-14	22	1.8
3. SW	-14	-24	1.8
4. NE	15	24	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	22	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	24	1.8
9. SE mdblk	15	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	22	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	24	1.8
17. SE blk	15	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035nP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	278.	.7	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	171.	.6	.0	.0	.0	.0	.1	.0	.1	.0
3. SW	9.	.6	.0	.0	.0	.1	.0	.0	.2	.0
4. NE	259.	.6	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.5	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	100.	.6	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	80.	.6	.0	.0	.0	.0	.0	.0	.4	.0
8. EN mdblk	262.	.5	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	348.	.4	.0	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	174.	.3	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	7.	.4	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	188.	.3	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035nP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035wP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	14	-150	14	0	AG	1663	1.5	.0	17.0
B. Airport NBD	14	0	14	150	AG	1894	1.5	.0	13.5
C. Airport NBL	9	-150	0	0	AG	522	1.5	.0	10.0
D. Airport SBA	-14	150	-14	0	AG	1631	1.5	.0	17.0
E. Airport SBD	-14	0	-14	-150	AG	2223	1.5	.0	13.5
F. Airport SBL	-9	150	0	0	AG	197	1.5	.0	10.0
G. Sperry R EBA	-150	-12	0	-12	AG	2314	1.2	.0	20.5
H. Sperry R EBD	0	-12	150	-12	AG	2650	.9	.0	17.0
I. Sperry R EBL	-150	-5	0	0	AG	250	1.5	.0	10.0
J. Sperry R WBA	150	12	0	12	AG	2576	1.3	.0	20.5
K. Sperry R WBD	0	12	-150	12	AG	2884	.9	.0	17.0
L. Sperry R WBL	150	5	0	0	AG	498	1.5	.0	10.0
M. Airport NBAX	14	-750	14	-150	AG	2185	.8	.0	17.0
N. Airport NBDX	14	150	14	750	AG	1894	.8	.0	13.5
O. Airport SBAX	-14	750	-14	150	AG	1828	.8	.0	17.0
P. Airport SBDX	-14	-150	-14	-750	AG	2223	.8	.0	13.5
Q. Sperry EBAX	-750	-12	-150	-12	AG	2564	.8	.0	20.5
R. Sperry EBDX	150	-12	750	-12	AG	2650	.8	.0	17.0
S. Sperry WBAX	750	12	150	12	AG	3074	.8	.0	20.5
T. Sperry WBDX	-150	12	-750	12	AG	2884	.8	.0	17.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035wP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	24	-22	1.8
2. NW	-24	22	1.8
3. SW	-22	-24	1.8
4. NE	22	24	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	22	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	24	1.8
9. SE mdblk	24	-150	1.8
10. NW mdblk	-24	150	1.8
11. SW mdblk	-22	-150	1.8
12. NE mdblk	22	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	22	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	24	1.8
17. SE blk	24	-600	1.8
18. NW blk	-24	600	1.8
19. SW blk	-22	-600	1.8
20. NE blk	22	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035wP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	279.	.7	.1	.0	.0	.0	.0	.0	.2	.0
2. NW	169.	.7	.0	.0	.0	.0	.2	.0	.0	.0
3. SW	79.	.7	.0	.0	.0	.0	.2	.0	.0	.2
4. NE	191.	.7	.2	.1	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.5	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	98.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	81.	.6	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	260.	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	350.	.5	.3	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.5	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	10.	.6	.0	.0	.0	.0	.4	.0	.0	.0
12. NE mdblk	189.	.6	.0	.3	.0	.0	.0	.0	.0	.0
13. ES blk	278.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035wP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035wP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Quantas NBA	12	-150	12	0	AG	1635	1.5	.0	13.5
B. Quantas NBD	12	0	12	150	AG	570	1.0	.0	10.0
C. Quantas NBL	9	-150	0	0	AG	1763	1.5	.0	10.0
D. Quantas SBA	-9	150	-9	0	AG	180	1.4	.0	13.5
E. Quantas SBD	-9	0	-9	-150	AG	1849	1.5	.0	10.0
F. Quantas SBL	-5	150	0	0	AG	350	1.5	.0	10.0
G. Arch-Air EBA	-150	-12	0	-12	AG	2197	1.2	.0	20.5
H. Arch-Air EBD	0	-12	150	-12	AG	3159	.9	.0	15.3
I. Arch-Air EBL	-150	-5	0	0	AG	250	1.5	.0	10.0
J. Arch-Air WBA	150	16	0	16	AG	1219	1.2	.0	20.5
K. Arch-Air WBD	0	16	-150	16	AG	2792	.9	.0	17.0
L. Arch-Air WBL	150	9	0	0	AG	776	1.5	.0	10.0
M. Quantas NBAX	12	-750	12	-150	AG	3398	.8	.0	13.5
N. Quantas NBDX	12	150	12	750	AG	570	.8	.0	10.0
O. Quantas SBAX	-9	750	-9	150	AG	530	.8	.0	13.5
P. Quantas SBDX	-9	-150	-9	-750	AG	1849	.8	.0	10.0
Q. Arch-Ai EBAX	-750	-12	-150	-12	AG	2447	.8	.0	20.5
R. Arch-Ai EBDX	150	-12	750	-12	AG	3159	.8	.0	15.3
S. Arch-Ai WBAX	750	16	150	16	AG	1995	.8	.0	20.5
T. Arch-Ai WBDX	-150	16	-750	16	AG	2792	.8	.0	17.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035wP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-21	1.8
2. NW	-17	26	1.8
3. SW	-15	-24	1.8
4. NE	19	28	1.8
5. ES mdblk	150	-21	1.8
6. WN mdblk	-150	26	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	28	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	19	150	1.8
13. ES blk	600	-21	1.8
14. WN blk	-600	26	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	28	1.8
17. SE blk	21	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	19	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035wP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	280.	.8	.1	.0	.0	.0	.0	.0	.2	.1
2. NW	170.	.7	.0	.0	.1	.0	.2	.0	.0	.0
3. SW	76.	.7	.0	.0	.0	.0	.2	.0	.0	.2
4. NE	188.	.6	.2	.0	.1	.0	.0	.0	.0	.0
5. ES mdblk	278.	.5	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	101.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.5	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	256.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	345.	.6	.3	.0	.2	.0	.0	.0	.0	.0
10. NW mdblk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	13.	.6	.0	.0	.1	.0	.4	.0	.0	.0
12. NE mdblk	186.	.4	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	352.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	8.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035wP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035wP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	9	-150	9	0	AG	1214	1.2	.0	13.5
B. Airport NBD	9	0	9	150	AG	2155	.9	.0	11.8
C. Airport NBL	5	-150	0	0	AG	171	1.5	.0	10.0
D. Airport SBA	-16	150	-16	0	AG	1410	1.2	.0	13.5
E. Airport SBD	-16	0	-16	-150	AG	1676	.9	.0	11.8
F. Airport SBL	-12	150	0	0	AG	733	1.5	.0	10.0
G. Performa EBA	-150	-7	0	-7	AG	292	1.4	.0	10.0
H. Performa EBD	0	-7	150	-7	AG	908	1.3	.0	10.0
I. Performa EBL	-150	-5	0	0	AG	201	1.5	.0	10.0
J. Performa WBA	150	9	0	9	AG	1281	1.5	.0	13.5
K. Performa WBD	0	9	-150	9	AG	783	1.0	.0	10.0
L. Performa WBL	150	5	0	0	AG	220	1.5	.0	10.0
M. Airport NBAX	9	-750	9	-150	AG	1385	.8	.0	13.5
N. Airport NBDX	9	150	9	750	AG	2155	.8	.0	11.8
O. Airport SBAX	-16	750	-16	150	AG	2143	.8	.0	13.5
P. Airport SBDX	-16	-150	-16	-750	AG	1676	.8	.0	11.8
Q. Perform EBAX	-750	-7	-150	-7	AG	493	.8	.0	10.0
R. Perform EBDX	150	-7	750	-7	AG	908	.8	.0	10.0
S. Perform WBAX	750	9	150	9	AG	1501	.8	.0	13.5
T. Perform WBDX	-150	9	-750	9	AG	783	.8	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035wP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-24	15	1.8
3. SW	-23	-14	1.8
4. NE	16	17	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-24	150	1.8
11. SW mdblk	-23	-150	1.8
12. NE mdblk	16	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	17	1.8
17. SE blk	17	-600	1.8
18. NW blk	-24	600	1.8
19. SW blk	-23	-600	1.8
20. NE blk	16	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035wP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	347.	.5	.0	.2	.0	.0	.0	.0	.0	.0
2. NW	97.	.5	.0	.0	.0	.1	.0	.0	.0	.0
3. SW	9.	.4	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	189.	.5	.1	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	281.	.4	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.3	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	261.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.4	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	168.	.4	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	8.	.4	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	189.	.4	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	172.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035wP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	*	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
17. SE blk	*	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035wP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. French C NBA	5	-150	5	0	AG	1270	1.5	.0	11.8
B. French C NBD	5	0	5	150	AG	250	.9	.0	10.0
C. French C NBL	2	-150	0	0	AG	261	1.5	.0	10.0
D. French C SBA	-5	150	-5	0	AG	150	1.4	.0	11.8
E. French C SBD	-5	0	-5	-150	AG	1392	1.5	.0	10.0
F. French C SBL	-2	150	0	0	AG	20	1.5	.0	10.0
G. Ash St. EBA	-150	-11	0	-11	AG	1729	1.2	.0	17.0
H. Ash St. EBD	0	-11	150	-11	AG	2656	.9	.0	15.3
I. Ash St. EBL	-150	-5	0	0	AG	200	1.5	.0	10.0
J. Ash St. WBA	150	11	0	11	AG	532	1.1	.0	17.0
K. Ash St. WBD	0	11	-150	11	AG	863	.8	.0	15.3
L. Ash St. WBL	150	5	0	0	AG	999	1.5	.0	10.0
M. French NBAX	5	-750	5	-150	AG	1531	.8	.0	11.8
N. French NBDX	5	150	5	750	AG	250	.8	.0	10.0
O. French SBAX	-5	750	-5	150	AG	170	.8	.0	11.8
P. French SBDX	-5	-150	-5	-750	AG	1392	.8	.0	10.0
Q. Ash St. EBAX	-750	-11	-150	-11	AG	1929	.8	.0	17.0
R. Ash St. EBDX	150	-11	750	-11	AG	2656	.8	.0	15.3
S. Ash St. WBAX	750	11	150	11	AG	1531	.8	.0	17.0
T. Ash St. WBDX	-150	11	-750	11	AG	863	.8	.0	15.3

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035wP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	13	-20	1.8
2. NW	-13	20	1.8
3. SW	-12	-21	1.8
4. NE	12	21	1.8
5. ES mdblk	150	-20	1.8
6. WN mdblk	-150	20	1.8
7. WS mdblk	-150	-21	1.8
8. EN mdblk	150	21	1.8
9. SE mdblk	13	-150	1.8
10. NW mdblk	-13	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-20	1.8
14. WN blk	-600	20	1.8
15. WS blk	-600	-21	1.8
16. EN blk	600	21	1.8
17. SE blk	13	-600	1.8
18. NW blk	-13	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035wP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	278.	.5	.1	.0	.0	.0	.0	.0	.2	.0
2. NW	172.	.5	.0	.0	.0	.0	.2	.0	.0	.0
3. SW	80.	.6	.0	.0	.0	.0	.1	.0	.0	.2
4. NE	187.	.5	.2	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.4	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	99.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.4	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	257.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	348.	.5	.3	.0	.0	.0	.1	.0	.0	.0
10. NW mdblk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	12.	.5	.1	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	183.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035wP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035wP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	9	-150	9	0	AG	1372	1.5	.0	13.5
B. Airport NBD	9	0	9	150	AG	1723	1.5	.0	10.0
C. Airport NBL	5	-150	0	0	AG	269	1.5	.0	10.0
D. Airport SBA	-7	150	-7	0	AG	1619	1.5	.0	10.0
E. Airport SBD	-7	0	-7	-150	AG	2073	1.5	.0	10.0
F. Airport SBL	-5	150	0	0	AG	439	1.5	.0	10.0
G. French C EBA	-150	-12	0	-12	AG	2187	1.2	.0	20.5
H. French C EBD	0	-12	150	-12	AG	2686	.9	.0	17.0
I. French C EBL	-150	-5	0	0	AG	476	1.5	.0	10.0
J. French C WBA	150	16	0	16	AG	1081	1.1	.0	20.5
K. French C WBD	0	16	-150	16	AG	1619	.9	.0	17.0
L. French C WBL	150	9	0	0	AG	658	1.5	.0	10.0
M. Airport NBAX	9	-750	9	-150	AG	1641	.8	.0	13.5
N. Airport NBDX	9	150	9	750	AG	1723	.8	.0	10.0
O. Airport SBAX	-7	750	-7	150	AG	2058	.8	.0	10.0
P. Airport SBDX	-7	-150	-7	-750	AG	2073	.8	.0	10.0
Q. French EBAX	-750	-12	-150	-12	AG	2663	.8	.0	20.5
R. French EBDX	150	-12	750	-12	AG	2686	.8	.0	17.0
S. French WBAX	750	16	150	16	AG	1739	.8	.0	20.5
T. French WBDX	-150	16	-750	16	AG	1619	.8	.0	17.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035wP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-22	1.8
2. NW	-14	26	1.8
3. SW	-14	-24	1.8
4. NE	15	28	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	26	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	28	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	26	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	28	1.8
17. SE blk	17	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035wP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	350.	.7	.0	.2	.0	.0	.0	.0	.0	.1
2. NW	171.	.7	.0	.0	.0	.1	.2	.0	.0	.0
3. SW	11.	.7	.0	.1	.0	.2	.2	.0	.1	.0
4. NE	192.	.7	.1	.2	.0	.0	.1	.0	.0	.0
5. ES mdblk	278.	.5	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	99.	.4	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	81.	.5	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	260.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.5	.3	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.6	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	8.	.6	.0	.0	.0	.0	.4	.0	.0	.0
12. NE mdblk	189.	.6	.0	.3	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035wP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: 2035wP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. French C NBA	9	-150	9	0	AG	160	1.4	.0	10.0
B. French C NBD	9	0	9	150	AG	480	1.3	.0	10.0
C. French C NBL	9	-150	0	0	AG	680	1.5	.0	10.0
D. French C SBA	-7	150	-7	0	AG	760	1.5	.0	10.0
E. French C SBD	-7	0	-7	-150	AG	1110	1.5	.0	10.0
F. French C SBL	-5	150	0	0	AG	110	1.5	.0	10.0
G. Sperry R EBA	-150	-12	0	-12	AG	2990	1.4	.0	20.5
H. Sperry R EBD	0	-12	150	-12	AG	2320	.9	.0	17.0
I. Sperry R EBL	-150	-5	0	0	AG	300	1.5	.0	10.0
J. Sperry R WBA	150	12	0	12	AG	2520	1.3	.0	20.5
K. Sperry R WBD	0	12	-150	12	AG	3750	1.1	.0	17.0
L. Sperry R WBL	150	5	0	0	AG	140	1.5	.0	10.0
M. French NBAX	9	-750	9	-150	AG	840	.8	.0	10.0
N. French NBDX	9	150	9	750	AG	480	.8	.0	10.0
O. French SBAX	-7	750	-7	150	AG	870	.8	.0	10.0
P. French SBDX	-7	-150	-7	-750	AG	1110	.8	.0	10.0
Q. Sperry EBAX	-750	-12	-150	-12	AG	3290	.8	.0	20.5
R. Sperry EBDX	150	-12	750	-12	AG	2320	.8	.0	17.0
S. Sperry WBAX	750	12	150	12	AG	2660	.8	.0	20.5
T. Sperry WBDX	-150	12	-750	12	AG	3750	.8	.0	17.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: 2035wP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	15	-22	1.8
2. NW	-14	22	1.8
3. SW	-14	-24	1.8
4. NE	15	24	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	22	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	24	1.8
9. SE mdblk	15	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	22	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	24	1.8
17. SE blk	15	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: 2035wP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	278.	.7	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	172.	.7	.0	.0	.0	.0	.2	.0	.1	.0
3. SW	11.	.6	.0	.0	.0	.0	.1	.0	.2	.0
4. NE	259.	.6	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.5	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	100.	.6	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	80.	.6	.0	.0	.0	.0	.0	.0	.4	.0
8. EN mdblk	262.	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	348.	.4	.0	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	174.	.4	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	8.	.4	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	188.	.3	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: 2035wP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: Existing-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	7	-150	7	0	AG	422	10.1	.0	10.0
B. Airport NBD	7	0	7	150	AG	366	6.4	.0	10.0
C. Airport NBL	5	-150	0	0	AG	21	13.0	.0	10.0
D. Airport SBA	-7	150	-7	0	AG	362	9.9	.0	10.0
E. Airport SBD	-7	0	-7	-150	AG	459	6.5	.0	10.0
F. Airport SBL	-5	150	0	0	AG	73	13.0	.0	10.0
G. Sperry R EBA	-150	-7	0	-7	AG	207	9.9	.0	10.0
H. Sperry R EBD	0	-7	150	-7	AG	435	6.5	.0	10.0
I. Sperry R EBL	-150	-5	0	0	AG	79	13.0	.0	10.0
J. Sperry R WBA	150	7	0	7	AG	189	9.9	.0	10.0
K. Sperry R WBD	0	7	-150	7	AG	228	6.4	.0	10.0
L. Sperry R WBL	150	5	0	0	AG	135	13.0	.0	10.0
M. Airport NBAX	7	-750	7	-150	AG	443	5.9	.0	10.0
N. Airport NBDX	7	150	7	750	AG	366	5.9	.0	10.0
O. Airport SBAX	-7	750	-7	150	AG	435	5.9	.0	10.0
P. Airport SBDX	-7	-150	-7	-750	AG	459	5.9	.0	10.0
Q. Sperry EBAX	-750	-7	-150	-7	AG	286	5.9	.0	10.0
R. Sperry EBDX	150	-7	750	-7	AG	435	5.9	.0	10.0
S. Sperry WBAX	750	7	150	7	AG	324	5.9	.0	10.0
T. Sperry WBDX	-150	7	-750	7	AG	228	5.9	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: Existing-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-14	1.8
2. NW	-14	14	1.8
3. SW	-14	-14	1.8
4. NE	14	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: Existing-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	350.	1.2	.1	.3	.0	.2	.0	.0	.0	.2
2. NW	98.	1.1	.0	.0	.0	.2	.0	.0	.0	.1
3. SW	82.	1.1	.2	.0	.0	.0	.2	.0	.0	.4
4. NE	187.	1.2	.5	.0	.0	.0	.1	.0	.0	.1
5. ES mdblk	278.	.9	.0	.0	.0	.0	.0	.0	.0	.4
6. WN mdblk	96.	.8	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.9	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	262.	.9	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	353.	1.1	.6	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	173.	1.1	.1	.0	.0	.5	.0	.1	.0	.0
11. SW mdblk	7.	1.0	.1	.0	.0	.0	.4	.0	.0	.0
12. NE mdblk	187.	.9	.0	.3	.0	.1	.0	.0	.0	.0
13. ES blk	276.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.6	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.8	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: Existing-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.3	.0	.2	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.1	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.3	.0
17. SE blk	.0	.0	.0	.0	.4	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.5	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: Existing-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Quantas NBA	9	-150	9	0	AG	3	11.7	.0	13.5
B. Quantas NBD	9	0	9	150	AG	161	6.9	.0	10.0
C. Quantas NBL	5	-150	0	0	AG	9	13.0	.0	10.0
D. Quantas SBA	-5	150	-5	0	AG	137	11.7	.0	10.0
E. Quantas SBD	-5	0	-5	-150	AG	245	6.9	.0	10.0
F. Quantas SBL	-5	150	0	0	AG	285	13.0	.0	10.0
G. Arch-Air EBA	-150	-11	0	-11	AG	424	8.9	.0	17.0
H. Arch-Air EBD	0	-11	150	-11	AG	633	6.2	.0	13.5
I. Arch-Air EBL	-150	-5	0	0	AG	14	13.0	.0	10.0
J. Arch-Air WBA	150	12	0	12	AG	377	8.9	.0	13.5
K. Arch-Air WBD	0	12	-150	12	AG	299	6.2	.0	10.0
L. Arch-Air WBL	150	9	0	0	AG	89	13.0	.0	10.0
M. Quantas NBAX	9	-750	9	-150	AG	12	5.9	.0	13.5
N. Quantas NBDX	9	150	9	750	AG	161	5.9	.0	10.0
O. Quantas SBAX	-5	750	-5	150	AG	422	5.9	.0	10.0
P. Quantas SBDX	-5	-150	-5	-750	AG	245	5.9	.0	10.0
Q. Arch-Ai EBAX	-750	-11	-150	-11	AG	438	5.9	.0	17.0
R. Arch-Ai EBDX	150	-11	750	-11	AG	633	5.9	.0	13.5
S. Arch-Ai WBAX	750	12	150	12	AG	466	5.9	.0	13.5
T. Arch-Ai WBDX	-150	12	-750	12	AG	299	5.9	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: Existing-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-19	1.8
2. NW	-12	19	1.8
3. SW	-12	-21	1.8
4. NE	15	21	1.8
5. ES mdblk	150	-19	1.8
6. WN mdblk	-150	19	1.8
7. WS mdblk	-150	-21	1.8
8. EN mdblk	150	21	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-19	1.8
14. WN blk	-600	19	1.8
15. WS blk	-600	-21	1.8
16. EN blk	600	21	1.8
17. SE blk	17	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: Existing-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	349.	1.0	.0	.1	.0	.1	.0	.3	.0	.2
2. NW	97.	1.2	.0	.0	.0	.1	.0	.2	.0	.0
3. SW	7.	1.1	.0	.0	.0	.2	.0	.3	.2	.0
4. NE	260.	.9	.0	.0	.0	.0	.0	.2	.1	.0
5. ES mdblk	279.	.9	.0	.0	.0	.0	.0	.0	.0	.5
6. WN mdblk	96.	.8	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.9	.0	.0	.0	.0	.0	.0	.5	.0
8. EN mdblk	261.	.9	.0	.0	.0	.0	.0	.0	.1	.0
9. SE mdblk	355.	.5	.0	.0	.0	.0	.0	.1	.0	.0
10. NW mdblk	170.	1.1	.0	.0	.0	.3	.0	.6	.0	.0
11. SW mdblk	5.	.7	.0	.0	.0	.0	.2	.1	.0	.0
12. NE mdblk	190.	.7	.0	.2	.0	.0	.0	.2	.0	.0
13. ES blk	277.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.6	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.8	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: Existing-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.4	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.1	.2	.0	.0	.0	.0	.0	.1	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.5	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.4	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: Existing-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	9	-150	9	0	AG	346	8.9	.0	13.5
B. Airport NBD	9	0	9	150	AG	414	6.2	.0	10.0
C. Airport NBL	5	-150	0	0	AG	38	13.0	.0	10.0
D. Airport SBA	-9	150	-9	0	AG	412	9.1	.0	13.5
E. Airport SBD	-9	0	-9	-150	AG	478	6.2	.0	10.0
F. Airport SBL	-5	150	0	0	AG	33	13.0	.0	10.0
G. Performa EBA	-150	-11	0	-11	AG	74	11.7	.0	10.0
H. Performa EBD	0	-11	150	-11	AG	54	6.9	.0	10.0
I. Performa EBL	-150	-9	0	0	AG	20	13.0	.0	10.0
J. Performa WBA	150	7	0	7	AG	76	11.7	.0	10.0
K. Performa WBD	0	7	-150	7	AG	73	6.9	.0	10.0
L. Performa WBL	150	5	0	0	AG	20	13.0	.0	10.0
M. Airport NBAX	9	-750	9	-150	AG	384	5.9	.0	13.5
N. Airport NBDX	9	150	9	750	AG	414	5.9	.0	10.0
O. Airport SBAX	-9	750	-9	150	AG	445	5.9	.0	13.5
P. Airport SBDX	-9	-150	-9	-750	AG	478	5.9	.0	10.0
Q. Perform EBAX	-750	-11	-150	-11	AG	94	5.9	.0	10.0
R. Perform EBDX	150	-11	750	-11	AG	54	5.9	.0	10.0
S. Perform WBAX	750	7	150	7	AG	96	5.9	.0	10.0
T. Perform WBDX	-150	7	-750	7	AG	73	5.9	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: Existing-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-17	1.8
2. NW	-17	14	1.8
3. SW	-15	-17	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-17	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-17	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: Existing-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	351.	.8	.0	.3	.0	.1	.0	.0	.0	.0
2. NW	171.	.8	.1	.0	.0	.0	.3	.0	.0	.0
3. SW	7.	.9	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	187.	.9	.4	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	276.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.4	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	263.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.9	.4	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	172.	.9	.0	.0	.0	.5	.0	.0	.0	.0
11. SW mdblk	7.	.8	.0	.0	.0	.0	.4	.0	.0	.0
12. NE mdblk	187.	.8	.0	.4	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.7	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.8	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: Existing-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
17. SE blk	.0	.0	.0	.0	.4	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.5	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: Existing-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. French C NBA	2	-150	2	0	AG	149	9.9	.0	10.0
B. French C NBD	2	0	2	150	AG	24	6.4	.0	10.0
C. French C NBL	2	-150	0	0	AG	115	13.0	.0	10.0
D. French C SBA	-2	150	-2	0	AG	11	9.9	.0	10.0
E. French C SBD	-2	0	-2	-150	AG	117	6.4	.0	10.0
F. French C SBL	-2	150	0	0	AG	17	13.0	.0	10.0
G. Ash St. EBA	-150	-2	0	-2	AG	344	10.4	.0	10.0
H. Ash St. EBD	0	-2	150	-2	AG	465	6.6	.0	10.0
I. Ash St. EBL	-150	-2	0	0	AG	2	13.0	.0	10.0
J. Ash St. WBA	150	2	0	2	AG	271	10.1	.0	10.0
K. Ash St. WBD	0	2	-150	2	AG	380	6.5	.0	10.0
L. Ash St. WBL	150	2	0	0	AG	77	13.0	.0	10.0
M. French NBAX	2	-750	2	-150	AG	264	5.9	.0	10.0
N. French NBDX	2	150	2	750	AG	24	5.9	.0	10.0
O. French SBAX	-2	750	-2	150	AG	28	5.9	.0	10.0
P. French SBDX	-2	-150	-2	-750	AG	117	5.9	.0	10.0
Q. Ash St. EBAX	-750	-2	-150	-2	AG	346	5.9	.0	10.0
R. Ash St. EBDX	150	-2	750	-2	AG	465	5.9	.0	10.0
S. Ash St. WBAX	750	2	150	2	AG	348	5.9	.0	10.0
T. Ash St. WBDX	-150	2	-750	2	AG	380	5.9	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: Existing-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	8	-8	1.8
2. NW	-8	8	1.8
3. SW	-8	-8	1.8
4. NE	8	8	1.8
5. ES mdblk	150	-8	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-8	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	8	-150	1.8
10. NW mdblk	-8	150	1.8
11. SW mdblk	-8	-150	1.8
12. NE mdblk	8	150	1.8
13. ES blk	600	-8	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-8	1.8
16. EN blk	600	8	1.8
17. SE blk	8	-600	1.8
18. NW blk	-8	600	1.8
19. SW blk	-8	-600	1.8
20. NE blk	8	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: Existing-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	276.	1.1	.0	.0	.0	.0	.0	.0	.5	.0
2. NW	97.	1.0	.0	.0	.0	.0	.0	.0	.0	.3
3. SW	83.	1.2	.0	.0	.0	.0	.0	.0	.0	.4
4. NE	186.	1.0	.2	.0	.2	.0	.0	.0	.0	.2
5. ES mdblk	276.	1.1	.0	.0	.0	.0	.0	.0	.0	.4
6. WN mdblk	96.	1.0	.0	.0	.0	.0	.0	.0	.3	.0
7. WS mdblk	84.	1.0	.0	.0	.0	.0	.0	.0	.5	.0
8. EN mdblk	263.	1.1	.0	.0	.0	.0	.0	.0	.0	.3
9. SE mdblk	352.	.7	.2	.0	.3	.0	.0	.0	.0	.0
10. NW mdblk	177.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	9.	.6	.2	.0	.2	.0	.1	.0	.0	.0
12. NE mdblk	182.	.4	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.8	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.8	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	177.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	182.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: Existing-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.4	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.3	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.4
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.3
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.4	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: Existing-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	7	-150	7	0	AG	267	8.9	.0	10.0
B. Airport NBD	7	0	7	150	AG	365	6.2	.0	10.0
C. Airport NBL	5	-150	0	0	AG	59	13.0	.0	10.0
D. Airport SBA	-7	150	-7	0	AG	375	9.4	.0	10.0
E. Airport SBD	-7	0	-7	-150	AG	364	6.3	.0	10.0
F. Airport SBL	-5	150	0	0	AG	262	14.0	.0	10.0
G. French C EBA	-150	-7	0	-7	AG	484	14.0	.0	10.0
H. French C EBD	0	-7	150	-7	AG	732	14.0	.0	10.0
I. French C EBL	-150	-5	0	0	AG	54	13.0	.0	10.0
J. French C WBA	150	7	0	7	AG	339	13.3	.0	10.0
K. French C WBD	0	7	-150	7	AG	413	10.8	.0	10.0
L. French C WBL	150	5	0	0	AG	34	13.0	.0	10.0
M. Airport NBAX	7	-750	7	-150	AG	326	5.9	.0	10.0
N. Airport NBDX	7	150	7	750	AG	365	5.9	.0	10.0
O. Airport SBAX	-7	750	-7	150	AG	637	5.9	.0	10.0
P. Airport SBDX	-7	-150	-7	-750	AG	364	5.9	.0	10.0
Q. French EBAX	-750	-7	-150	-7	AG	538	5.9	.0	10.0
R. French EBDX	150	-7	750	-7	AG	732	5.9	.0	10.0
S. French WBAX	750	7	150	7	AG	373	5.9	.0	10.0
T. French WBDX	-150	7	-750	7	AG	413	5.9	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: Existing-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-14	1.8
2. NW	-14	14	1.8
3. SW	-14	-14	1.8
4. NE	14	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: Existing-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	279.	1.8	.2	.0	.0	.0	.0	.0	.8	.3
2. NW	100.	1.9	.0	.0	.0	.2	.0	.2	.0	.5
3. SW	82.	2.1	.0	.0	.0	.0	.1	.0	.2	1.2
4. NE	260.	1.7	.0	.1	.0	.1	.0	.2	.3	.0
5. ES mdblk	278.	2.1	.0	.0	.0	.0	.0	.0	.0	1.5
6. WN mdblk	97.	1.5	.0	.0	.0	.0	.0	.0	.2	.3
7. WS mdblk	83.	1.8	.0	.0	.0	.0	.0	.0	1.0	.2
8. EN mdblk	262.	1.6	.0	.0	.0	.0	.0	.0	.2	.4
9. SE mdblk	354.	1.1	.4	.0	.1	.1	.0	.1	.0	.0
10. NW mdblk	171.	1.5	.0	.1	.0	.5	.0	.4	.0	.1
11. SW mdblk	6.	1.0	.0	.0	.0	.0	.3	.1	.0	.0
12. NE mdblk	188.	1.1	.0	.3	.0	.1	.0	.2	.0	.0
13. ES blk	276.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.9	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.9	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.7	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.8	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.9	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: Existing-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.6	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.1	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.7	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.4
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.4	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.6	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.2	.0	.0	.0	.0	.0

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TRANSMITTAL

TO: Mario Amancio
California Department of Transportation
District 8
464 W. Fourth Street, MS1229
San Bernardino, CA 92401-1400

PROJECT: I-10/Citrus Interchange

PROJECT NUMBER: BOE930

DATE: May 4, 2007

☐ FOR YOUR REVIEW ☐ FOR YOUR FILES
☒ AT YOUR REQUEST ☐ FOR YOUR INFORMATION
☐ FOR YOUR APPROVAL ☒ DISTRIBUTION

SUBJECT: Draft IS/EA, FHWA checklist and approved technical studies

ITEMS BELOW ARE TRANSMITTED: ☒ HEREWITH ☐ UNDER SEPARATE COVER ☒ VIA: Overnight delivery

DATE	COPIES	DESCRIPTION
May 2007	5	Draft Initial Study/Environmental Assessment (IS/EA)
May 2007	5	FHWA Checklist
December 2006	3	Air Quality Analysis
April 2007	3	Draft Relocation Impact Study (DRIS)
May 2006	3	Natural Environment Study (NES)
January 2007	3	Hazardous Waste ISA Memorandum
March 2000	3	AGRA ISA
February 2002	3	Historic Property Survey Report (HPSR)
December 2006	3	Traffic Analysis and Appendices
August 2006	3	Visual Impact Analysis
December 2006	3	Noise Impact Analysis
March 2007	3	Community Impact Analysis
May 4, 2007	5	Responses to comments

GENERAL REMARKS:

Attached for submittal to FHWA for approval to circulate for public review is the revised Draft IS/EA and the updated FHWA IS/EA checklist for the I-10/Citrus Avenue interchange project. Also attached are 3 copies of each of the technical studies.

If you have questions please contact me at (949) 553-0666.

COPIES TO: Debbie Keene, Boniface Udotor, Nicole Quinlan, Mike Crull, Paul Balbach, and Project File w/o attachments;

BY: King Thomas

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: Existing-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. French C NBA	9	-150	9	0	AG	0	5.9	.0	10.0
B. French C NBD	9	0	9	150	AG	0	5.9	.0	10.0
C. French C NBL	9	-150	0	0	AG	0	5.9	.0	10.0
D. French C SBA	-7	150	-7	0	AG	0	5.9	.0	10.0
E. French C SBD	-7	0	-7	-150	AG	0	5.9	.0	10.0
F. French C SBL	-5	150	0	0	AG	0	5.9	.0	10.0
G. Sperry R EBA	-150	-12	0	-12	AG	0	5.9	.0	20.5
H. Sperry R EBD	0	-12	150	-12	AG	0	5.9	.0	17.0
I. Sperry R EBL	-150	-5	0	0	AG	0	5.9	.0	10.0
J. Sperry R WBA	150	12	0	12	AG	0	5.9	.0	20.5
K. Sperry R WBD	0	12	-150	12	AG	0	5.9	.0	17.0
L. Sperry R WBL	150	5	0	0	AG	0	5.9	.0	10.0
M. French NBAX	9	-750	9	-150	AG	0	5.9	.0	10.0
N. French NBDX	9	150	9	750	AG	0	5.9	.0	10.0
O. French SBAX	-7	750	-7	150	AG	0	5.9	.0	10.0
P. French SBDX	-7	-150	-7	-750	AG	0	5.9	.0	10.0
Q. Sperry EBAX	-750	-12	-150	-12	AG	0	5.9	.0	20.5
R. Sperry EBDX	150	-12	750	-12	AG	0	5.9	.0	17.0
S. Sperry WBAX	750	12	150	12	AG	0	5.9	.0	20.5
T. Sperry WBDX	-150	12	-750	12	AG	0	5.9	.0	17.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: Existing-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	15	-22	1.8
2. NW	-14	22	1.8
3. SW	-14	-24	1.8
4. NE	15	24	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	22	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	24	1.8
9. SE mdblk	15	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	22	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	24	1.8
17. SE blk	15	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
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JOB: Tidewater Crossing
RUN: Existing-06 (WORST CASE ANGLE)
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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. SE	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: Existing-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: ExistwP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	9	-150	9	0	AG	715	10.4	.0	13.5
B. Airport NBD	9	0	9	150	AG	650	6.5	.0	10.0
C. Airport NBL	5	-150	0	0	AG	83	13.0	.0	10.0
D. Airport SBA	-11	150	-11	0	AG	523	10.1	.0	10.0
E. Airport SBD	-11	0	-11	-150	AG	782	6.5	.0	10.0
F. Airport SBL	-9	150	0	0	AG	110	13.0	.0	10.0
G. Sperry R EBA	-150	-9	0	-9	AG	301	9.9	.0	13.5
H. Sperry R EBD	0	-9	150	-9	AG	655	6.5	.0	10.0
I. Sperry R EBL	-150	-5	0	0	AG	79	13.0	.0	10.0
J. Sperry R WBA	150	12	0	12	AG	555	10.1	.0	13.5
K. Sperry R WBD	0	12	-150	12	AG	552	6.5	.0	10.0
L. Sperry R WBL	150	9	0	0	AG	273	13.0	.0	10.0
M. Airport NBAX	9	-750	9	-150	AG	798	5.9	.0	13.5
N. Airport NBDX	9	150	9	750	AG	650	5.9	.0	10.0
O. Airport SBAX	-11	750	-11	150	AG	633	5.9	.0	10.0
P. Airport SBDX	-11	-150	-11	-750	AG	782	5.9	.0	10.0
Q. Sperry EBAX	-750	-9	-150	-9	AG	380	5.9	.0	13.5
R. Sperry EBDX	150	-9	750	-9	AG	655	5.9	.0	10.0
S. Sperry WBAX	750	12	150	12	AG	828	5.9	.0	13.5
T. Sperry WBDX	-150	12	-750	12	AG	552	5.9	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: ExistwP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-15	1.8
2. NW	-17	19	1.8
3. SW	-17	-17	1.8
4. NE	15	21	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	19	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	21	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-17	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	19	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	21	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-17	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: ExistwP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	349.	1.7	.2	.4	.0	.2	.0	.1	.0	.3
2. NW	97.	1.9	.0	.1	.0	.3	.0	.0	.0	.0
3. SW	79.	1.8	.2	.0	.0	.0	.3	.0	.1	.4
4. NE	187.	2.1	.8	.2	.0	.0	.1	.0	.0	.1
5. ES mdblk	279.	1.4	.0	.0	.0	.0	.0	.0	.0	.6
6. WN mdblk	96.	1.3	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	83.	1.2	.0	.0	.0	.0	.0	.0	.4	.0
8. EN mdblk	260.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	1.7	1.0	.0	.1	.1	.0	.0	.0	.0
10. NW mdblk	172.	1.7	.2	.0	.0	.8	.0	.2	.0	.0
11. SW mdblk	8.	1.5	.2	.1	.0	.0	.7	.0	.0	.0
12. NE mdblk	186.	1.4	.1	.6	.0	.0	.1	.0	.0	.0
13. ES blk	277.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.8	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	1.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: ExistwP-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.2	.0	.2	.0	.0	.1	.0	.0	.0	.0	.0
2. NW	.0	.6	.1	.2	.0	.0	.0	.0	.0	.2	.1	.0
3. SW	.0	.2	.0	.2	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	.3	.0	.1	.1	.0	.0	.2	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	.0	.8	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.7	.0
17. SE blk	.0	.0	.0	.0	.7	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.6	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.3	.0	.0	.7	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.6	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: ExistwP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Quantas NBA	14	-150	14	0	AG	408	14.0	.0	10.0
B. Quantas NBD	14	0	14	150	AG	161	6.9	.0	10.0
C. Quantas NBL	12	-150	0	0	AG	462	13.0	.0	10.0
D. Quantas SBA	-7	150	-7	0	AG	137	11.7	.0	10.0
E. Quantas SBD	-7	0	-7	-150	AG	514	7.2	.0	10.0
F. Quantas SBL	-5	150	0	0	AG	285	14.0	.0	10.0
G. Arch-Air EBA	-150	-12	0	-12	AG	621	9.1	.0	20.5
H. Arch-Air EBD	0	-12	150	-12	AG	1092	6.3	.0	13.5
I. Arch-Air EBL	-150	-5	0	0	AG	14	13.0	.0	10.0
J. Arch-Air WBA	150	12	0	12	AG	446	9.1	.0	13.5
K. Arch-Air WBD	0	12	-150	12	AG	821	6.3	.0	10.0
L. Arch-Air WBL	150	9	0	0	AG	215	13.0	.0	10.0
M. Quantas NBAX	14	-750	14	-150	AG	870	5.9	.0	10.0
N. Quantas NBDX	14	150	14	750	AG	161	5.9	.0	10.0
O. Quantas SBAX	-7	750	-7	150	AG	422	5.9	.0	10.0
P. Quantas SBDX	-7	-150	-7	-750	AG	514	5.9	.0	10.0
Q. Arch-Ai EBAX	-750	-12	-150	-12	AG	635	5.9	.0	20.5
R. Arch-Ai EBDX	150	-12	750	-12	AG	1092	5.9	.0	13.5
S. Arch-Ai WBAX	750	12	150	12	AG	661	5.9	.0	13.5
T. Arch-Ai WBDX	-150	12	-750	12	AG	821	5.9	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: ExistwP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	21	-21	1.8
2. NW	-14	19	1.8
3. SW	-14	-24	1.8
4. NE	21	21	1.8
5. ES mdblk	150	-21	1.8
6. WN mdblk	-150	19	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	21	1.8
9. SE mdblk	21	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	21	150	1.8
13. ES blk	600	-21	1.8
14. WN blk	-600	19	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	21	1.8
17. SE blk	21	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	21	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: ExistwP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	279.	1.9	.4	.0	.2	.0	.1	.0	.5	.3
2. NW	167.	1.8	.3	.0	.5	.0	.3	.0	.2	.0
3. SW	79.	1.8	.2	.0	.3	.0	.2	.0	.0	.6
4. NE	187.	1.9	.6	.0	.3	.0	.0	.0	.0	.2
5. ES mdblk	278.	1.6	.0	.0	.0	.0	.0	.0	.0	.9
6. WN mdblk	98.	1.5	.0	.0	.0	.0	.0	.0	.0	.2
7. WS mdblk	83.	1.3	.0	.0	.0	.0	.0	.0	.6	.1
8. EN mdblk	260.	1.4	.0	.0	.0	.0	.0	.0	.2	.1
9. SE mdblk	349.	2.0	.9	.0	.7	.0	.1	.0	.0	.0
10. NW mdblk	173.	1.4	.2	.0	.2	.3	.0	.4	.0	.0
11. SW mdblk	11.	1.4	.2	.0	.3	.0	.5	.0	.0	.0
12. NE mdblk	186.	1.0	.1	.2	.2	.0	.0	.1	.0	.0
13. ES blk	276.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: ExistwP-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
2. NW	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	.2	.0	.1	.1	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1
6. WN mdblk	.0	.0	.7	.0	.0	.0	.0	.0	.0	.1	.0	.0
7. WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.6	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.8
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.6	.0
17. SE blk	.0	.0	.0	.0	.8	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.3	.0	.0	.5	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: ExistwP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	9	-150	9	0	AG	610	9.4	.0	13.5
B. Airport NBD	9	0	9	150	AG	769	6.3	.0	10.0
C. Airport NBL	5	-150	0	0	AG	69	13.0	.0	10.0
D. Airport SBA	-9	150	-9	0	AG	702	9.4	.0	13.5
E. Airport SBD	-9	0	-9	-150	AG	924	6.3	.0	10.0
F. Airport SBL	-5	150	0	0	AG	66	13.0	.0	10.0
G. Performa EBA	-150	-11	0	-11	AG	116	11.7	.0	10.0
H. Performa EBD	0	-11	150	-11	AG	122	6.9	.0	10.0
I. Performa EBL	-150	-9	0	0	AG	21	13.0	.0	10.0
J. Performa WBA	150	7	0	7	AG	207	12.3	.0	10.0
K. Performa WBD	0	7	-150	7	AG	116	6.9	.0	10.0
L. Performa WBL	150	5	0	0	AG	140	13.0	.0	10.0
M. Airport NBAX	9	-750	9	-150	AG	679	5.9	.0	13.5
N. Airport NBDX	9	150	9	750	AG	769	5.9	.0	10.0
O. Airport SBAX	-9	750	-9	150	AG	768	5.9	.0	13.5
P. Airport SBDX	-9	-150	-9	-750	AG	924	5.9	.0	10.0
Q. Perform EBAX	-750	-11	-150	-11	AG	137	5.9	.0	10.0
R. Perform EBDX	150	-11	750	-11	AG	122	5.9	.0	10.0
S. Perform WBAX	750	7	150	7	AG	347	5.9	.0	10.0
T. Perform WBDX	-150	7	-750	7	AG	116	5.9	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: ExistwP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-17	1.8
2. NW	-17	14	1.8
3. SW	-15	-17	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-17	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-17	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: ExistwP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	350.	1.4	.2	.5	.0	.2	.0	.0	.0	.0
2. NW	170.	1.4	.2	.0	.0	.2	.6	.0	.0	.0
3. SW	7.	1.5	.0	.1	.0	.7	.2	.0	.0	.0
4. NE	187.	1.6	.7	.1	.0	.0	.1	.0	.0	.0
5. ES mdblk	280.	.6	.0	.0	.0	.0	.0	.0	.0	.1
6. WN mdblk	95.	.6	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.7	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	261.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	1.5	.8	.0	.0	.2	.1	.0	.0	.0
10. NW mdblk	172.	1.5	.2	.1	.0	.9	.0	.0	.0	.0
11. SW mdblk	8.	1.5	.2	.1	.0	.0	.8	.0	.0	.0
12. NE mdblk	187.	1.4	.0	.7	.0	.2	.1	.0	.0	.0
13. ES blk	276.	.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	1.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: ExistwP-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. NW	*	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
3. SW	*	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0
4. NE	*	.0	.2	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
5. ES mdblk	*	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.4	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0
17. SE blk	*	.0	.0	.0	.0	.6	.0	.0	.3	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.2	.7	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.2	.0	.0	.8	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.7	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: ExistwP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. French C NBA	7	-150	7	0	AG	649	12.9	.0	10.0
B. French C NBD	7	0	7	150	AG	24	6.4	.0	10.0
C. French C NBL	5	-150	0	0	AG	126	13.0	.0	10.0
D. French C SBA	-7	150	-7	0	AG	11	9.9	.0	10.0
E. French C SBD	-7	0	-7	-150	AG	679	7.5	.0	10.0
F. French C SBL	-5	150	0	0	AG	17	13.0	.0	10.0
G. Ash St. EBA	-150	-7	0	-7	AG	493	10.8	.0	10.0
H. Ash St. EBD	0	-7	150	-7	AG	1071	12.2	.0	10.0
I. Ash St. EBL	-150	-5	0	0	AG	2	13.0	.0	10.0
J. Ash St. WBA	150	11	0	11	AG	343	10.4	.0	10.0
K. Ash St. WBD	0	11	-150	11	AG	463	6.6	.0	10.0
L. Ash St. WBL	150	9	0	0	AG	596	14.0	.0	10.0
M. French NBAX	7	-750	7	-150	AG	775	5.9	.0	10.0
N. French NBDX	7	150	7	750	AG	24	5.9	.0	10.0
O. French SBAX	-7	750	-7	150	AG	28	5.9	.0	10.0
P. French SBDX	-7	-150	-7	-750	AG	679	5.9	.0	10.0
Q. Ash St. EBAX	-750	-7	-150	-7	AG	495	5.9	.0	10.0
R. Ash St. EBDX	150	-7	750	-7	AG	1071	5.9	.0	10.0
S. Ash St. WBAX	750	11	150	11	AG	939	5.9	.0	10.0
T. Ash St. WBDX	-150	11	-750	11	AG	463	5.9	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: ExistwP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-14	1.8
2. NW	-14	17	1.8
3. SW	-14	-14	1.8
4. NE	14	17	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	17	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	17	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	17	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: ExistwP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	79.	2.6	.0	.0	.0	.0	.0	.0	.0	1.8
2. NW	100.	1.8	.0	.0	.0	.0	.0	.0	.0	.5
3. SW	81.	3.2	.3	.0	.0	.0	.3	.0	.2	1.5
4. NE	187.	2.5	.9	.0	.2	.0	.2	.0	.0	.4
5. ES mdblk	279.	2.6	.0	.0	.0	.0	.0	.0	.0	1.8
6. WN mdblk	97.	1.5	.0	.0	.0	.0	.0	.0	.1	.3
7. WS mdblk	85.	1.7	.0	.0	.0	.0	.0	.0	.7	.3
8. EN mdblk	256.	2.4	.1	.0	.0	.0	.0	.0	.0	.6
9. SE mdblk	349.	1.9	1.2	.0	.2	.0	.2	.0	.0	.0
10. NW mdblk	175.	.9	.2	.0	.0	.0	.1	.0	.0	.0
11. SW mdblk	14.	1.7	.5	.0	.1	.0	.7	.0	.0	.2
12. NE mdblk	182.	.9	.2	.0	.0	.0	.0	.0	.0	.1
13. ES blk	276.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	180.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: ExistwP-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.1	.0	.5	.0	.0	.0	.0	.0	.0	.2	.0
2. NW	.0	.4	.0	.5	.0	.0	.0	.0	.0	.2	.0	.0
3. SW	.0	.1	.0	.5	.0	.0	.0	.0	.0	.0	.2	.0
4. NE	.0	.2	.0	.3	.1	.0	.0	.2	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.2	.0	.0	.0	.0	.0	.1	.0	.0
7. WS mdblk	.0	.1	.0	.2	.0	.0	.0	.0	.0	.1	.1	.0
8. EN mdblk	.0	.5	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.9	.0
17. SE blk	.0	.0	.0	.0	.7	.0	.0	.3	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.3	.0	.0	.6	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: ExistwP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Airport NBA	7	-150	7	0	AG	499	12.3	.0	10.0
B. Airport NBD	7	0	7	150	AG	988	10.8	.0	10.0
C. Airport NBL	5	-150	0	0	AG	88	13.0	.0	10.0
D. Airport SBA	-7	150	-7	0	AG	1014	14.2	.0	10.0
E. Airport SBD	-7	0	-7	-150	AG	657	13.6	.0	10.0
F. Airport SBL	-5	150	0	0	AG	371	14.2	.0	10.0
G. French C EBA	-150	-7	0	-7	AG	711	9.4	.0	10.0
H. French C EBD	0	-7	150	-7	AG	1098	6.4	.0	10.0
I. French C EBL	-150	-5	0	0	AG	380	14.2	.0	10.0
J. French C WBA	150	7	0	7	AG	620	9.4	.0	10.0
K. French C WBD	0	7	-150	7	AG	1032	6.4	.0	10.0
L. French C WBL	150	5	0	0	AG	92	13.0	.0	10.0
M. Airport NBAX	7	-750	7	-150	AG	587	5.9	.0	10.0
N. Airport NBDX	7	150	7	750	AG	988	5.9	.0	10.0
O. Airport SBAX	-7	750	-7	150	AG	1385	5.9	.0	10.0
P. Airport SBDX	-7	-150	-7	-750	AG	657	5.9	.0	10.0
Q. French EBAX	-750	-7	-150	-7	AG	1091	5.9	.0	10.0
R. French EBDX	150	-7	750	-7	AG	1098	5.9	.0	10.0
S. French WBAX	750	7	150	7	AG	712	5.9	.0	10.0
T. French WBDX	-150	7	-750	7	AG	1032	5.9	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: ExistwP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-14	1.8
2. NW	-14	14	1.8
3. SW	-14	-14	1.8
4. NE	14	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: ExistwP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	350.	3.4	.2	1.2	.0	.6	.0	.4	.0	.5
2. NW	10.	3.1	.0	.4	.0	2.0	.0	.4	.0	.0
3. SW	8.	3.9	.0	.4	.0	1.6	.2	.4	.4	.0
4. NE	260.	3.3	.0	.7	.0	.5	.0	.2	.3	.0
5. ES mdblk	277.	2.1	.0	.0	.0	.1	.0	.0	.1	.9
6. WN mdblk	98.	2.2	.0	.0	.0	.0	.0	.0	.2	.2
7. WS mdblk	81.	2.6	.0	.1	.0	.2	.0	.0	1.0	.0
8. EN mdblk	264.	2.1	.0	.0	.0	.0	.0	.0	.2	.2
9. SE mdblk	353.	2.4	.9	.2	.1	.3	.3	.1	.0	.0
10. NW mdblk	171.	3.6	.1	.4	.0	2.0	.0	.6	.0	.0
11. SW mdblk	6.	2.6	.2	.3	.0	.3	1.2	.1	.0	.0
12. NE mdblk	190.	3.0	.0	1.5	.0	.6	.2	.3	.0	.0
13. ES blk	276.	1.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	1.7	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.8	.0	.0	.0	.1	.0	.0	.0	.0
16. EN blk	264.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	1.9	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.8	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: ExistwP-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.2	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0
3. SW	.3	.0	.2	.0	.0	.2	.1	.0	.0	.0	.0	.0
4. NE	.4	.2	.7	.0	.0	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	.1	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1
6. WN mdblk	.3	.0	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.6	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.1	.8	.1	.1	.0	.0	.0	.0	.1	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.9
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.4
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.7	.0
17. SE blk	.0	.0	.0	.0	.6	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.3	1.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.6	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.9	.5	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Tidewater Crossing
RUN: ExistwP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	2. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. French C NBA	9	-150	9	0	AG	0	5.9	.0	10.0
B. French C NBD	9	0	9	150	AG	0	5.9	.0	10.0
C. French C NBL	9	-150	0	0	AG	0	5.9	.0	10.0
D. French C SBA	-7	150	-7	0	AG	0	5.9	.0	10.0
E. French C SBD	-7	0	-7	-150	AG	0	5.9	.0	10.0
F. French C SBL	-5	150	0	0	AG	0	5.9	.0	10.0
G. Sperry R EBA	-150	-12	0	-12	AG	0	5.9	.0	20.5
H. Sperry R EBD	0	-12	150	-12	AG	0	5.9	.0	17.0
I. Sperry R EBL	-150	-5	0	0	AG	0	5.9	.0	10.0
J. Sperry R WBA	150	12	0	12	AG	0	5.9	.0	20.5
K. Sperry R WBD	0	12	-150	12	AG	0	5.9	.0	17.0
L. Sperry R WBL	150	5	0	0	AG	0	5.9	.0	10.0
M. French NBAX	9	-750	9	-150	AG	0	5.9	.0	10.0
N. French NBDX	9	150	9	750	AG	0	5.9	.0	10.0
O. French SBAX	-7	750	-7	150	AG	0	5.9	.0	10.0
P. French SBDX	-7	-150	-7	-750	AG	0	5.9	.0	10.0
Q. Sperry EBAX	-750	-12	-150	-12	AG	0	5.9	.0	20.5
R. Sperry EBDX	150	-12	750	-12	AG	0	5.9	.0	17.0
S. Sperry WBAX	750	12	150	12	AG	0	5.9	.0	20.5
T. Sperry WBDX	-150	12	-750	12	AG	0	5.9	.0	17.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Tidewater Crossing
RUN: ExistwP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	15	-22	1.8
2. NW	-14	22	1.8
3. SW	-14	-24	1.8
4. NE	15	24	1.8
5. ES mdblk	150	-22	1.8
6. WN mdblk	-150	22	1.8
7. WS mdblk	-150	-24	1.8
8. EN mdblk	150	24	1.8
9. SE mdblk	15	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-22	1.8
14. WN blk	-600	22	1.8
15. WS blk	-600	-24	1.8
16. EN blk	600	24	1.8
17. SE blk	15	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Tidewater Crossing
RUN: ExistwP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

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. SE	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	0.	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Tidewater Crossing
RUN: ExistwP-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

APPENDIX C

EMFAC2002 MODEL PRINTOUTS

Title : San Joaquin Valley Air Basin Avg 2006 Winter
Version : Emfac2002 V2.2 Apr 23 2003
Run Date : 11/07/05 15:13:17
Scen Year: 2006 -- Model Years: 1965 to 2006
Season : Winter
Area : San Joaquin Valley AB
****
Year:2006 -- Model Years 1965 to 2006 Inclusive -- Winter
Emfac2002 Emission Factors: V2.2 Apr 23 2003

San Joaquin Valley A Basin Average Basin Average

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Total Organic Gases Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	7.027	5.600	0.000	0.000	1.083
1	1.039	1.588	1.453	3.320	13.498	6.663	1.515
5	0.843	1.302	1.238	3.320	13.498	6.663	1.302
10	0.575	0.906	0.859	2.415	8.959	5.255	0.910
15	0.413	0.661	0.624	1.823	6.200	4.338	0.666
20	0.311	0.505	0.474	1.424	4.473	3.749	0.509
25	0.245	0.404	0.377	1.149	3.364	3.390	0.407
30	0.203	0.338	0.312	0.956	2.636	3.208	0.340
35	0.176	0.296	0.270	0.819	2.153	3.177	0.296
40	0.160	0.271	0.244	0.722	1.832	3.293	0.268
45	0.152	0.260	0.230	0.654	1.623	3.572	0.254
50	0.151	0.260	0.226	0.609	1.498	4.054	0.252
55	0.158	0.273	0.233	0.582	1.439	4.815	0.260
60	0.172	0.299	0.250	0.571	1.440	5.986	0.281
65	0.198	0.344	0.281	0.576	1.499	7.788	0.319

Pollutant Name: Carbon Monoxide Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	39.684	30.011	0.000	0.000	5.988
1	8.986	16.271	13.021	31.953	107.386	48.931	14.217
5	8.164	14.439	11.772	31.953	107.386	48.931	13.076
10	6.889	11.695	9.190	21.495	71.169	40.175	10.287
15	5.959	9.802	7.488	15.235	49.859	34.723	8.438
20	5.260	8.460	6.330	11.375	36.923	31.588	7.169

25	4.724	7.491	5.525	8.947	28.900	30.246	6.277
30	4.308	6.794	4.965	7.412	23.909	30.485	5.647
35	3.989	6.305	4.586	6.467	20.906	32.345	5.212
40	3.750	5.992	4.354	5.945	19.319	36.134	4.936
45	3.586	5.844	4.258	5.757	18.869	42.508	4.805
50	3.499	5.870	4.304	5.875	19.476	52.667	4.825
55	3.497	6.105	4.517	6.318	21.245	68.734	5.027
60	3.607	6.619	4.956	7.164	24.492	94.488	5.471
65	3.870	7.538	5.722	8.567	29.839	136.823	6.272

Pollutant Name: Oxides of Nitrogen Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	7.548	69.082	0.000	0.000	6.188
1	0.883	1.535	2.453	19.550	23.648	1.236	2.822
5	0.815	1.415	2.332	19.550	23.648	1.236	2.737
10	0.707	1.222	2.000	16.357	18.846	1.287	2.317
15	0.628	1.083	1.768	14.185	15.835	1.340	2.026
20	0.569	0.984	1.608	12.741	13.972	1.396	1.828
25	0.527	0.915	1.502	11.845	12.891	1.453	1.700
30	0.498	0.869	1.439	11.391	12.387	1.511	1.626
35	0.480	0.843	1.413	11.324	12.360	1.571	1.601
40	0.470	0.833	1.419	11.636	12.784	1.632	1.620
45	0.469	0.839	1.460	12.355	13.704	1.693	1.686
50	0.477	0.861	1.538	13.559	15.246	1.756	1.806
55	0.493	0.900	1.660	15.387	17.654	1.819	1.993
60	0.520	0.960	1.841	18.066	21.355	1.883	2.270
65	0.559	1.046	2.102	21.961	27.101	1.947	2.673

Pollutant Name: Carbon Dioxide Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	1587.088	3754.281	0.000	0.000	442.963
1	1133.442	1363.818	1914.034	2064.178	2619.180	225.083	1360.595
5	971.761	1170.093	1740.324	2064.178	2619.180	225.083	1200.702
10	734.534	885.850	1269.732	1945.944	2185.534	192.221	935.464
15	576.284	696.235	972.321	1876.123	1929.452	166.882	760.851
20	469.273	568.015	779.783	1833.611	1773.526	147.282	643.979
25	396.614	480.956	653.514	1807.189	1676.622	132.137	565.249
30	347.898	422.584	571.141	1790.729	1616.250	120.521	512.780
35	316.712	385.217	519.564	1780.824	1579.922	111.772	479.351
40	299.222	364.262	491.261	1775.611	1560.800	105.422	460.686
45	293.382	357.264	482.360	1774.171	1555.521	101.158	454.523

Title : San Joaquin Valley Air Basin Avg 2035 Winter
Version : Emfac2002 V2.2 Apr 23 2003
Run Date : 01/03/06 18:00:44
Scen Year: 2035 -- Model Years: 1990 to 2035
Season : Winter
Area : San Joaquin Valley AB
****
****

Year:2035 -- Model Years 1990 to 2035 Inclusive -- Winter
Emfac2002 Emission Factors: V2.2 Apr 23 2003

San Joaquin Valley A Basin Average Basin Average

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Total Organic Gases Temperature: 40F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	4.434	4.992	0.000	0.000	0.779
1	0.082	0.125	0.181	0.548	1.203	5.527	0.163
5	0.065	0.099	0.149	0.548	1.203	5.527	0.143
10	0.042	0.064	0.100	0.425	0.818	4.207	0.100
15	0.029	0.044	0.071	0.338	0.579	3.368	0.074
20	0.021	0.032	0.052	0.275	0.427	2.836	0.057
25	0.016	0.024	0.041	0.229	0.328	2.509	0.046
30	0.013	0.019	0.033	0.196	0.262	2.331	0.039
35	0.011	0.016	0.028	0.171	0.218	2.275	0.034
40	0.009	0.015	0.025	0.153	0.189	2.331	0.031
45	0.009	0.014	0.023	0.140	0.170	2.508	0.030
50	0.009	0.014	0.023	0.131	0.160	2.831	0.030
55	0.009	0.014	0.023	0.125	0.155	3.356	0.031
60	0.010	0.016	0.025	0.123	0.157	4.174	0.035
65	0.012	0.018	0.028	0.123	0.165	5.451	0.040

Pollutant Name: Carbon Monoxide Temperature: 40F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	25.719	26.722	0.000	0.000	4.337
1	0.903	1.266	1.842	4.764	11.445	28.225	1.540
5	0.861	1.206	1.768	4.764	11.445	28.225	1.493
10	0.785	1.097	1.543	3.261	7.530	23.840	1.251
15	0.717	1.001	1.369	2.341	5.241	20.958	1.080
20	0.657	0.916	1.230	1.763	3.860	19.141	0.953

25	0.604	0.841	1.116	1.391	3.007	18.153	0.856
30	0.557	0.775	1.020	1.151	2.477	17.896	0.780
35	0.514	0.716	0.939	0.999	2.159	18.384	0.720
40	0.477	0.664	0.870	0.909	1.989	19.745	0.673
45	0.443	0.617	0.810	0.867	1.939	22.263	0.639
50	0.413	0.575	0.759	0.867	1.998	26.455	0.617
55	0.386	0.538	0.716	0.910	2.177	33.245	0.610
60	0.362	0.505	0.682	1.002	2.508	44.277	0.623
65	0.340	0.476	0.656	1.158	3.056	62.552	0.665

Pollutant Name: Oxides of Nitrogen Temperature: 40F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	5.447	65.466	0.000	0.000	5.716
1	0.093	0.149	0.273	1.572	5.157	1.505	0.270
5	0.087	0.138	0.259	1.572	5.157	1.505	0.262
10	0.076	0.120	0.225	1.317	4.240	1.439	0.223
15	0.067	0.106	0.200	1.144	3.675	1.396	0.196
20	0.061	0.096	0.182	1.029	3.336	1.370	0.177
25	0.056	0.088	0.170	0.958	3.150	1.360	0.165
30	0.052	0.082	0.162	0.922	3.077	1.363	0.157
35	0.050	0.078	0.157	0.917	3.098	1.378	0.153
40	0.048	0.075	0.156	0.942	3.207	1.405	0.154
45	0.047	0.074	0.159	1.000	3.414	1.443	0.159
50	0.047	0.074	0.165	1.097	3.743	1.494	0.168
55	0.047	0.075	0.175	1.244	4.241	1.557	0.184
60	0.049	0.078	0.191	1.458	4.994	1.635	0.207
65	0.051	0.082	0.214	1.770	6.148	1.730	0.241

Pollutant Name: Carbon Dioxide Temperature: 40F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0.000	0.000	1153.591	3521.585	0.000	0.000	380.862
1	1100.487	1388.620	1916.678	2096.504	2385.191	266.394	1358.835
5	943.384	1190.396	1714.730	2096.504	2385.191	266.394	1196.296
10	712.873	899.550	1261.608	1947.168	1938.989	222.055	930.740
15	559.102	705.532	971.341	1858.980	1675.491	190.725	755.649
20	455.121	574.334	781.294	1805.283	1515.051	168.753	638.319
25	384.519	485.252	655.496	1771.912	1415.340	153.821	559.212
30	337.182	425.525	572.816	1751.121	1353.221	144.501	506.460
35	306.879	387.291	520.726	1738.611	1315.841	139.994	472.838
40	289.884	365.848	491.966	1732.026	1296.166	140.006	454.067
45	284.209	358.688	482.762	1730.208	1290.733	144.710	447.881

APPENDIX D

SCREENING HEALTH RISK ASSESSMENT

Screening Health Risk Assessment of Diesel Exhaust

According to California Air Resources Board (ARB),[1] when conducting a health risk assessment (HRA), the potential cancer risk from inhalation exposure to diesel particulate matter (PM) will outweigh the potential noncancer health impacts from diesel PM. Therefore, inhalation cancer risk is required for every HRA. When comparing whole diesel exhaust to speciated diesel exhaust (e.g., PAHs, metals), potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multipathway cancer risk from the speciated components. For this reason, there will be few situations where an analysis of multipathway risk is necessary.[2] To estimate the potential cancer risk associated with project-related diesel engine exhaust, a dispersion model is used to translate an emission rate from a source location to a concentration at a receptor location of interest. Dispersion modeling varies from the simpler, more conservative screening-level analysis to the more complex and refined detailed analysis. This calculation was performed using the EPA-approved TSCREEN3 computer model. This model provides conservative estimates of concentrations considering site and source geometry, source strength, distance to receptor, and building wake effects on plume distribution. The TSCREEN3 model was developed to provide an easy-to-use method of obtaining pollutant concentration estimates where upper-bound estimates are required or where meteorological data is unavailable. It is a useful tool in proving that an impact is not significant (i.e., if a screening-level analysis demonstrates an impact not significant, its conservative nature provides confidence in this conclusion). Screening-level modeling is less useful in concluding that an impact is significant. When a screening-level analysis indicates a significant impact, this conclusion normally points to the need for a more sophisticated (and less conservative) method of analysis using a model such as ISCST.

This worksheet contains a screening-level single pathway analysis of diesel exhaust from trains operating on tracks adjacent to the project and trucks operating in the industrial area northeast of the project, analyzing only the inhalation pathway.

Diesel (engine) locomotives drive most freight trains and commuter passenger trains. Emissions from locomotives are relatively low. Emissions factors in the EPA's Technical Highlights: Emission Factors for Locomotives (EPA420-F-97-051, December 1997) were used to estimate train emissions. Since it is expected that some older locomotives will continue to be used into the 70-year analysis period, it is assumed that 50% of the locomotives are manufactured prior to 2004 and 50% after.

There is little rail activity on the rail line in the vicinity of the industrial uses. However, to evaluate the worst case conditions it is estimated that up to 84 trains would pass in a one-week period, an average of 12 trains per day. It is assumed that over the 70-year period of this health risk analysis there would be a 50% increase in trains per day, for an average of 18 trains per day. Additionally, it was assumed that 20% of the daily trains will be passenger trains using an engine of approximately 3000 hp (24 per day) and 80% freight trains using engines of approximately 5000 hp (96 per day). The train emission factors are shown in Table A.

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[1] HARP Model Documentation, Appendix K, *Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Engines*, ARB, http://www.arb.ca.gov/toxics/harp/docs/userguide/appendixK.pdf, February 2005.

[2] OEHHA, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, August 2003, Appendix D, *Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Vehicles*, Section B.

Table A: Train Emission Factors (g/bhp-hr)

Category	PM_{10}
Locomotives manufactured from 1973 – 2004	0.32
Locomotives manufactured after 2004	0.17

Source: EPA EPA420-F-97-051, December 1997

It is not known what the average speed of the passenger and most freight trains is thru this area. Since the trains' exhaust will be more concentrated at slower speeds, a conservative assumption is that they are moving through the area at approximately 20 miles per hour (mph). The locomotive emission rates are listed in Table B.

Table B: Locomotive Emission Rates per Type and Activity (gm/day)

Category	PM_{10}
Passenger	0.63
Freight	3.3

Source: LSA Associates, Inc., February 2006.

The passing trains were modeled by a series of nine sources spaced at a 100 ft interval located so that the center source was at the closest point to the nearest residence. The total concentration at the residence is the sum of all nine sources. Stack height, dimensions, exhaust temperature and exit velocity were based on a typical electric/diesel hybrid locomotive. The TSCREEN model was run with the urban dispersion coefficient with the resulting PM_{10} concentrations shown in Table C.

Table C: PM_{10} Concentrations ($\mu g/m^3$) at Closest Residence

Source spacing on track (ft)	Distance from residence (ft)	Distance from residence (m)	PM_{10} concentration at residence from each source
400	412	125.7	16.096
300	316	96.4	19.464
200	224	68.2	23.904
100	141	43.1	31.584
0	100	30.5	34.856
100	141	43.1	31.584
200	224	68.2	23.904
300	316	96.4	19.464
400	412	125.7	16.096
		Total	**216.95**

Source: LSA Associates, Inc., February 2006.

Following OEHHA methodology and using the following equation:

Inhalation Cancer Risk = ((Cair * DBR * A * EF * ES * $1x10^{-6}$) / AT) * Inhalation Cancer Potency Factor

Where:

Cair	Concentration of PM_{10} in air		
DBR	303	Daily breathing rate	(L/kg-day)
A	1	Inhalation absorption factor	
EF	2.068	Exposure frequency	(days/yr)
ED	70	Exposure duration	(years)
AT	25,550	Avg. time period of exposure	(days)
Diesel PM_{10}	1.1	Inhalation Cancer Potency factor	$(mg/kg\text{-}d)^{-1}$
Diesel PM_{10}	5.0	Inhalation Chronic REL	$(\mu g/m^3)$

Source: OEHHA Guidelines, August 2003

The Exposure frequency of 2.068 days per year is derived from 18 trains per day passing at 20 mph.

The ARB model, EMFAC2002, was used for emission factors for diesel trucks both idling and operating to determine the total emissions of PM_{10} from the trucks operating on site. As shown in Table D, an average emission factor was developed for each truck type that more accurately models the exposure over the 70-year exposure period of the health risk analysis. Since the EMFAC2002 model only goes to 2040, it is conservatively assumed that the emission factors will stay at that rate for the rest of the time period. It is assumed that the trucks operating on site will average 8 mph overall.

Table D: Emission Factors (gm/mi) over the 70-Years of Health Risk Analysis

	Light Heavy-Duty (LHD1)		Medium Heavy Duty (MHD)		Heavy Heavy-Duty (HHD)	
Fleet	**Idling (g/hr)**	**8 mph (g/mi)**	**Idling (g/hr)**	**8 mph (g/mi)**	**Idling (g/hr)**	**8 mph (g/mi)**
2007 mix[1]	0.069	0.120	0.069	0.692	1.387	0.651
2020 mix[1]	0.054	0.062	0.054	0.342	0.943	0.209
2030 mix[1]	0.049	0.045	0.049	0.269	0.867	0.155
2040 mix[1]	0.044	0.040	0.044	0.252	0.809	0.149
2040 only[2]	0.045	0.018	0.045	0.068	0.801	0.077
Average	**0.052**	**0.057**	**0.052**	**0.325**	**0.961**	**0.248**

Source: The ARB EMFAC2002 model

To attempt to characterize a typical industrial warehouse truck usage and the number of daily trips that are attributed to diesel trucks, the total average daily truck trips of 5,300 is first broken down into three categories using the data in a study performed by the City of Fontana to characterize vehicle usage in warehouse-type of projects. This study is widely used as a reference for traffic analyses. Within each of these categories, the ARB model URBEMIS2002 is used to determine what percentage of each are diesel. It is assumed that each truck idles for 1.5 minutes per trip to account for stopping at the entry gate, warming up the engine, and miscellaneous tasks. Table E shows the derivation of the overall diesel exhaust emission rate.

[1] EMFAC2002 emission factors for the standard fleet mix of vehicles ranging from new to 45 years old.
[2] EMFAC2002 emission factors for only model year 2040 vehicles.

Table E: Diesel Truck Exhaust Emissions

Total Project ADT	Fontana Fleet Percentage Breakdown[1]	Total Trips per Day	% of Vehicles That Are Diesel[2]	Diesel Trucks per Day
5,300	3.5	909	20.0%	182
	4.6	1,195	70.0%	837
	12.3	3,196	87.5%	2,796

Truck Type	Diesel PM_{10} gm/mi (on site)[3]	Distance On Site (mi/trip)	Running Exhaust Diesel PM_{10} (gm/day)	Diesel Idle Exhaust gm/min (on site)	Idle Time (min/trip)	Idle Exhaust Diesel PM_{10} (gm/day)	Total Diesel Exhaust PM_{10} (gm/day)
2 Axle	0.191[4]	0.25	8.7	0.0009	1.5	0.2	8.9
3 Axle	0.191	0.25	40	0.0009	1.5	1.1	41
4+ Axle	0.248	0.25	173	0.0160	1.5	67	241
						Total Project Site Emissions:	291

Source: LSA Associates, Inc., February 2006

Since no specifics on truck movement on site were available, for the purposes of this analysis all diesel truck exhaust was modeled as if it came from a single spot located on site nearer to the residences. This technique was used because it is not known how the trucks will travel on the project site and because it generates health-risk values that are more conservative than the reality of spreading the truck emissions over the site. The TSCREEN3 model input parameters are shown in Table F. Stack height and diameter were based on observations of many trucks and approximating typical dimensions. Exhaust temperature and velocity were taken from ARB guidance[5].

[1] Data from the City of Fontana Truck Trip Generation Study, August 2003.
[2] URBEMIS2002 fleet diesel percentages, based on warehouse type land-use.
[3] EMFAC2002 emission factors from Table A.
[4] Two- and three-axle trucks are assumed to be 50 percent light-heavy-duty (LHDT1) trucks and 50 percent medium-heavy-duty (MHD) trucks.
[5] Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, Appendix VII, ARB, October 2000.

Table F: TSCREEN Input parameters:

Simple Terrain Inputs:		
Source Type	=	Point
Emission Rate (G/S)	=	1.0
Stack Height (M)	=	3.0
Stk Inside Diam (M)	=	.82
Stk Exit Velocity (M/S)	=	45.4
Stk Gas Exit Temp (K)	=	600
Ambient Air Temp (K)	=	293
Receptor Height (M)	=	0
Urban/Rural Option	=	Urban

Following OEHHA methodology and using the following equation:

Inhalation Cancer Risk = ((Cair * DBR * A * EF * ES * $1x10^{-6}$) / AT) * Inhalation Cancer Potency Factor

Where:

Cair	Concentration of PM_{10} in air		
DBR	303	Daily breathing rate	(L/kg-day)
A	1	Inhalation absorption factor	
EF	350	Exposure frequency	(days/yr)
ED	70	Exposure duration	(years)
AT	25,550	Avg. time period of exposure	(days)
Diesel PM_{10}	1.1	Inhalation Cancer Potency factor	$(mg/kg\text{-}d)^{-1}$
Diesel PM_{10}	5.0	Inhalation Chronic REL	$(\mu g/m^3)$

Source: OEHHA Guidelines, August 2003

Table G shows the results of the screening health risk assessment. Even with the conservative modeling technique used (concentrating all truck exhaust to emit from the center of the project area), the risk to which a theoretical person that stood at the nearest residential area for 70 years (the MICR) would be exposed to is 1.6 in a million, less than the 10 in a million threshold recommended by OEHHA & SCAQMD. The Hazard Index would be 0.009, less than the threshold of 1.0. This is a less than significant impact.

Table G: Screening Health Risk Assessment Results

	Inhalation Cancer Risk		**Chronic HI**
From Trains	0.04	in a million	0.004
From Trucks	1.6	in a million	0.001
Total Risk	**1.6**	**in a million**	**0.005**
Threshold	**10**	**in a million**	**1.0**

Source: LSA Associates, Inc., February 2006